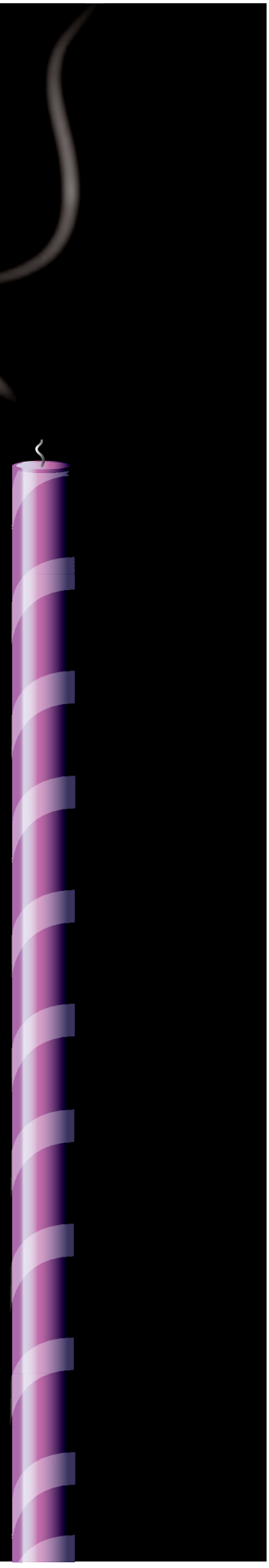
2013 City of Milwaukee

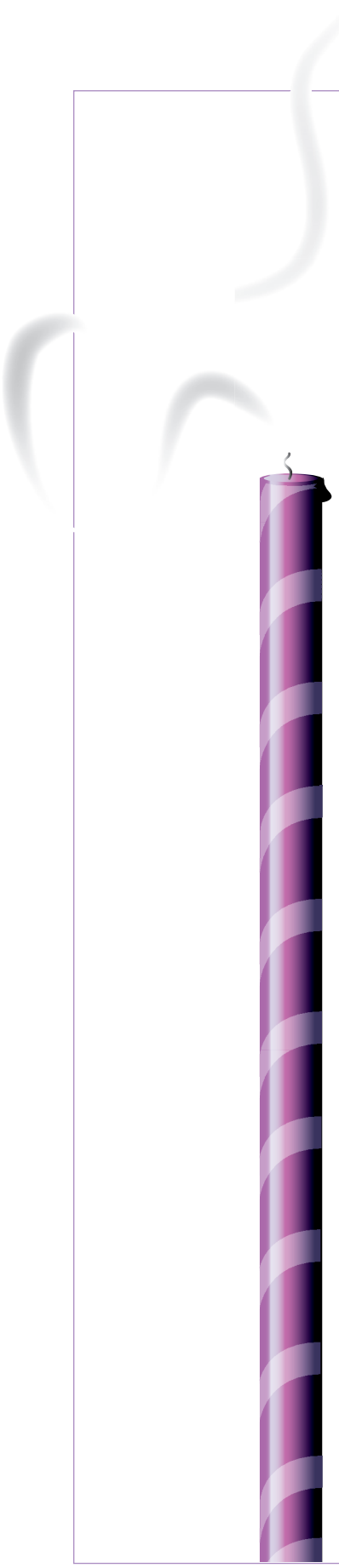
Fetal Infant Mortality Review (FIMR) Report



Status Report on 2009-2011 Stillbirths and Infant Deaths

Think Health Act Now!
City of Milwaukee
Health Department

2013 City of Milwaukee



Fetal Infant Mortality Review (FIMR) Report

Status Report on
2009-2011 Stillbirths and Infant Deaths

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Authors and Acknowledgements

MESSAGE FROM MAYOR AND COMMISSIONER

SARAH TO WRITE???

Dear Friends,

We have set a goal of reducing the infant mortality rate for African-Americans 15% over the next four years, and for the city, our goal is to reduce it 10% over the next five years.

Talking points:

- neighborhoods in trouble
- overall rate might be down but DISPARITY increasing
- complex issue
- need to work collaboratively and collectively
- protection of mothers and their families
- entire region to be invested in the issue, particularly among the health care community.

MESSAGE

or

INTRO TO REPORT

from Dr. Ngui

DR. NGUI BY NEXT WEEK?????

Executive Summary

BACKGROUND

This Fetal Infant Mortality Review (FIMR) report summarizes what is known about factors that contribute to Milwaukee's stillbirths and infant deaths in an effort to reduce infant mortality and eliminate the racial and ethnic disparities seen within these deaths. Through a case review process, an analysis is done on all stillbirths and all infants who die before their first birthday. This is the sixth report since FIMR began in 1993. Each report seeks to inform and encourage new and improved programs and policies to prevent infant deaths and stillbirths in our community.

FINDINGS

During 2009-2011, the City of Milwaukee had 205 stillbirths and 318 infant deaths. Stillbirths and infant deaths are a complex and multi-faceted problem with no single solution. The City of Milwaukee had 15% of State of Wisconsin births, 25% of all infant deaths, and 20% of all the stillbirths in Wisconsin in 2010. In 2011 in Milwaukee, the non-Hispanic Black infant mortality rate was 14.0 (14 infant deaths per 1000 live births). This was nearly three times the non-Hispanic White rate of 4.6. The Hispanic infant mortality rate was 8.0, nearly two times the non-Hispanic White rate. Milwaukee's racial/ethnic, social, and economic issues must be taken into account as we develop recommendations and take action to reverse this trend. According to the Nonprofit Center of Milwaukee, the City of Milwaukee ranks eighth in poverty rates among U.S. cities with a population of 300,000 or more. Approximately 29% of Milwaukee residents live in poverty and the rate increases to 43% for children under the age of 18.[1] This report identifies several key factors that contribute to infant mortality in Milwaukee.

Infant Death

The most common causes of infant death are:

- Complications of prematurity: More than half of all infants die because they were born too soon.
- Sudden Infant Death Syndrome (SIDS), overlay, or accidental suffocation: Nearly 15% of infant deaths were sleep related.
- Congenital abnormalities and related complications: Nearly 20% of infant deaths were related to congenital abnormalities.

Stillbirth

The most common causes of stillbirth are:

- Unknown (40%)
- Maternal disease (e.g. diabetes, hypertension), maternal infection (e.g. urinary tract infection (UTI) or sexually transmitted infection (STI) (24%)
- Congenital abnormalities (14%)

RECOMMENDATIONS

The FIMR Case Review Team's recommendations to reduce infant death and stillbirth requires the establishment of private and public partnerships to affect change and encourage action. The questions are 'Who is responsible?' 'Who should take action?' and 'What action will be most effective?' The recommendations are:

1. Improve women's health and quality of care across the lifespan
2. Improve comprehensive reproductive health services for all girls and boys, women and men of reproductive age
3. Promote, educate and support Safe Sleep
4. Support and promote men's health and fatherhood issues across the lifespan
5. Understand and work to eliminate racism and improve the social, economic, educational and environmental determinants of health

What is the Fetal Infant Mortality Review (FIMR)?

FIMR is a multidisciplinary case review of all infant deaths and all stillbirths occurring in the City of Milwaukee. There is a standing Case Review Team (CRT) which consists of a diverse group of health and social service professionals and community members who review the life and death circumstances of mothers and their babies. The team seeks to identify each factor contributing directly or indirectly to the death, and to identify opportunities to improve community service systems for pregnant women, infants and families with young children.

WHY FIMR EXISTS

The goals of FIMR are to:

- Examine factors associated with stillbirths and infant deaths through case reviews
- Identify specific areas of action and make recommendations for action
- Assist in planning interventions and policies to address and improve service systems and community resources
- Assist and participate in community implementation of interventions and policies
- Assess the progress of interventions

THE FIMR PROCESS

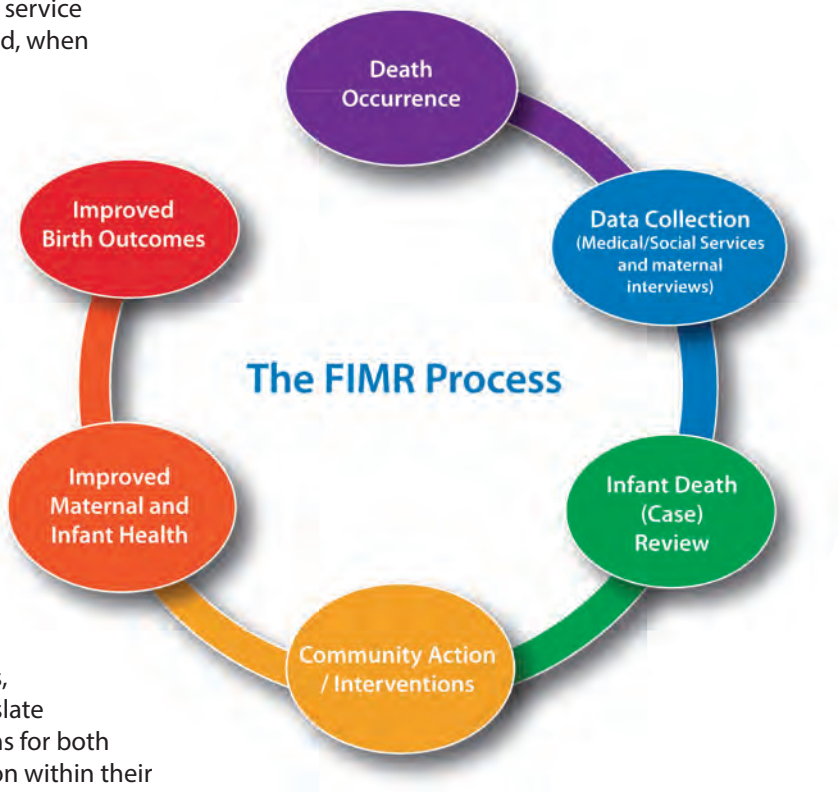
As shown in the figure below, the FIMR process/cycle of improvement includes data collection, case review and recommendations, community action and changes in community systems.

DEATH occurrence: The process begins when a stillbirth or infant death occurs.

DATA collection: FIMR collects data from multiple sources, including vital statistics, medical and social service records. Maternal interviews are conducted, when possible.

CASE reviews: Information for the stillbirth and infant death cases are summarized and presented to the FIMR Case Review Team (CRT) without any identifying information. An analysis is done on all stillbirth and all infants who die before their first birthday.

COMMUNITY action/intervention: After reviewing the case summaries, the FIMR Case Review Team identifies health system, social service system, individual and community factors that may have contributed to the death, and makes recommendations for change. The Case Review Team members, policy makers, institutions, and community agencies translate these recommendations into specificactions for both collaborative and individual implementation within their spheres of influence.



Infant Mortality Rates, Stillbirth Rates & Background Information

Infant mortality is defined as the number of infants who die during their first year of life. The infant mortality rate (IMR) is the number of infant deaths per 1,000 live births during a given period of time. The State of Wisconsin defines stillbirths as those deaths where a baby dies before birth, has not taken a breath or had a heartbeat. Stillbirth and infant mortality is commonly considered as a marker or barometer of the general health and well-being of a population. This report is based on the most recent three year pooled data from 2009 to 2011 for the city of Milwaukee. The 2011 data are preliminary and the final 2011 data from State of Wisconsin was not available at the time this analysis. We will update the individual graphs and tables posted in the online version of this report, when these numbers become available. This report includes analyses of stillbirths (fetal deaths) and infant deaths in the city.

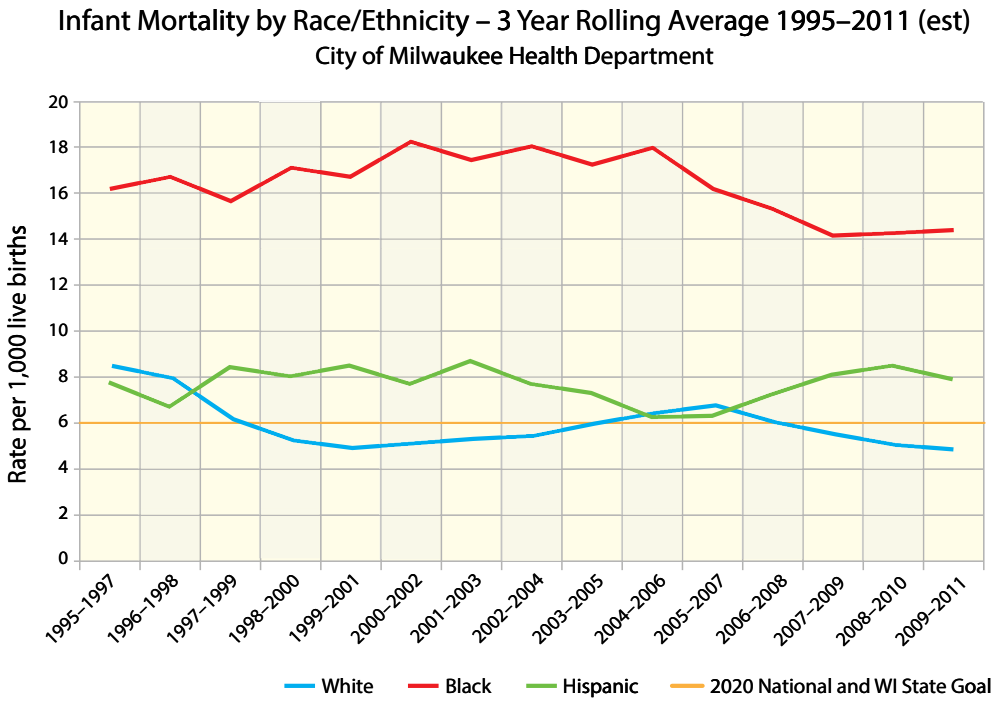
We include analyses of stillbirths because we want to emphasize the significant burden of these deaths and better understand their causes and develop effective interventions to prevent these losses.

A primary goal of the City of Milwaukee Health Department is to reduce infant mortality, and specifically the reduction of racial disparities in infant mortality. The city seeks to reduce the overall infant mortality rate by at least 10%, to about 9.4 infant deaths per 1000 live births, while simultaneously reducing the Black infant mortality rate by at least 15% to about 12 deaths per 1000 live births by 2017.

Summary of Stillbirths and Infant Deaths in Milwaukee between 2009 and 2011	**Stillbirths**	**Infant Deaths**
Total	**N=205**	**N=318**
Overall rate	6.5	10.6
White Non-Hispanic rate	3.7	5.2
Black Non-Hispanic rate	9.4	14.4
Hispanic rate	3.6	7.5

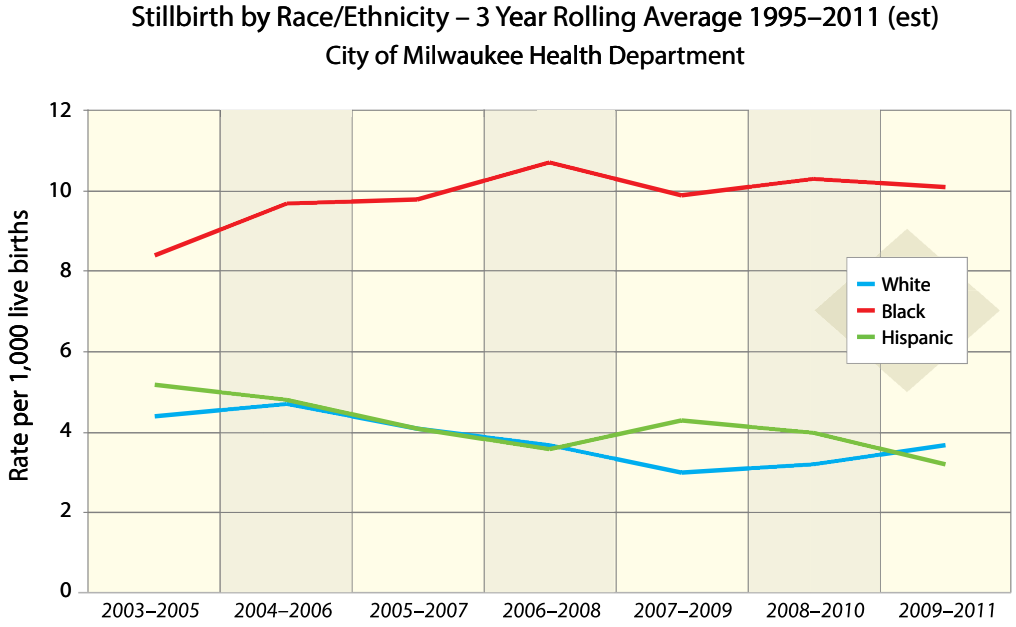
Overall, between 2009 and 2011, there were 205 stillbirths and 318 infant deaths in the city of Milwaukee, translating to an overall stillbirth rate of 6.5 and infant mortality rate of 10.6 per 1000 live births. The stillbirth and infant mortality rates were nearly three times higher among Blacks than Whites. The Black-White disparity in infant mortality has persisted for several decades as shown in the graphs on page 8. Only the White infant mortality rate is less than the national and state goal.

MILWAUKEE'S INFANT MORTALITY RATE COMPARED TO PRIOR YEARS



Between 2002 and 2011, the City of Milwaukee averaged about 11,000 births per year. The number of births, however, has been declining in Wisconsin and Milwaukee consistent with similar declines nationwide.[2] A decline in infant mortality in Milwaukee is evident among Whites and Blacks from about 2005.

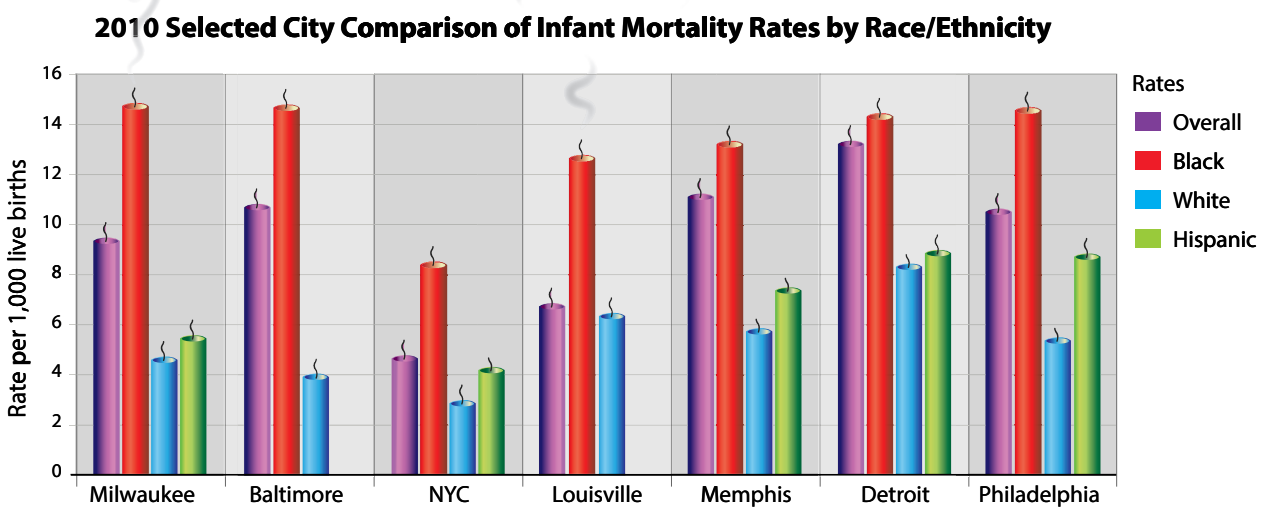
MILWAUKEE'S STILLBIRTH RATE COMPARED TO PRIOR YEARS



How Does Milwaukee Compare Nationally and Internationally?

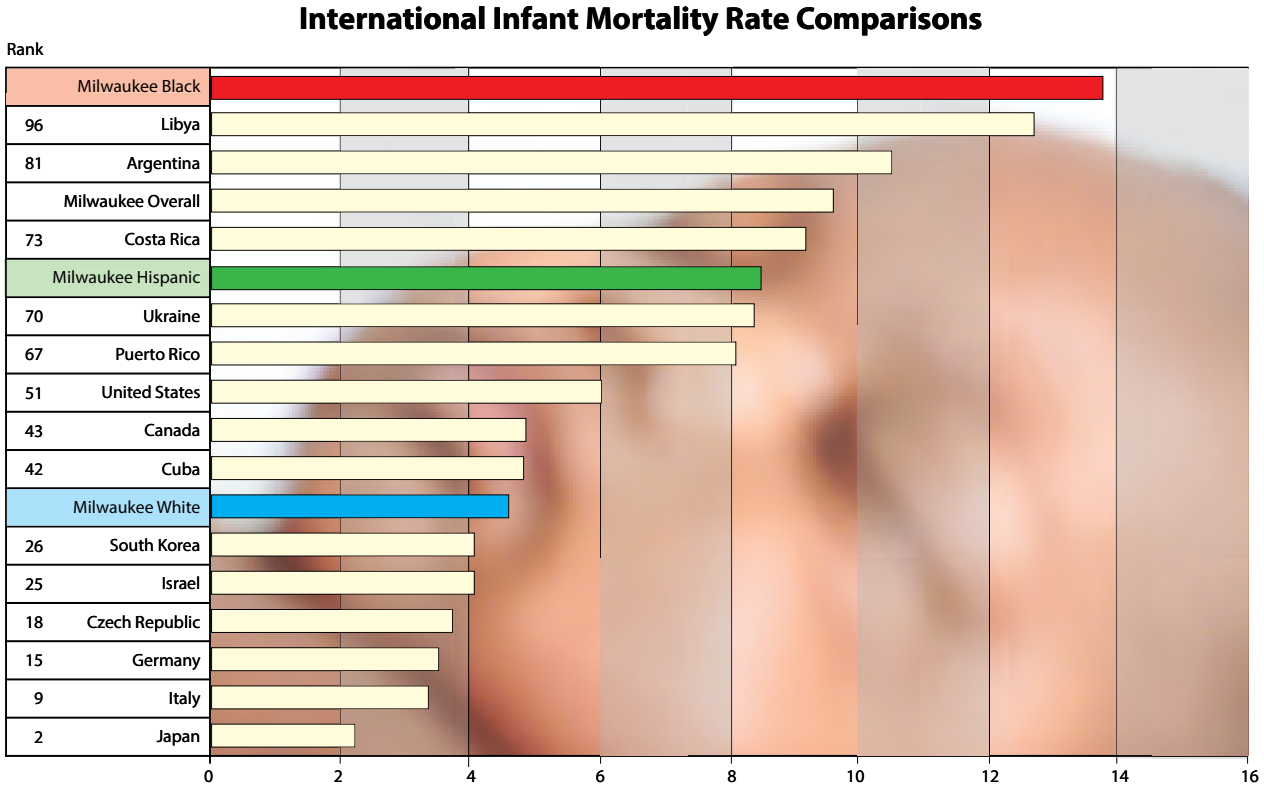
INFANT MORTALITY RATE, CITY COMPARISON

Comparing the infant mortality rate of the city of Milwaukee with other selected large cities with similar racial/ethnic and economic make up, the Black infant mortality rate in 2010 was comparable to the Black rate in Baltimore, Philadelphia and Detroit. The Black rate was higher than other cities such as New York, Louisville, and Memphis.[3]



INTERNATIONAL INFANT MORTALITY RATE COMPARISONS

Comparing the city of Milwaukee to other cities across the globe, our infant mortality rate is worse than 77 other countries. Our Black infant mortality rate is higher than that of countries such as Cuba, Libya, and the Ukraine.[4]



Prematurity

Prematurity or preterm birth is a birth before 37 weeks gestation. It is:

- The **LEADING** cause of infant death and stillbirth in Milwaukee.
- Over 80% of Milwaukee mothers who experienced an infant death or a stillbirth delivered preterm.
- As a comparison, only 10.6% of 2009-2011 City of Milwaukee live births were preterm.

If we cannot or do not address this issue, we will never reduce our infant mortality or stillbirth rates, nor will be able to eliminate the racial and ethnic disparities seen in these deaths. Prematurity is a complicated issue and it requires action on many levels. The following information is meant to help the reader understand some of the economic, social and medical issues which are risk factors for preterm birth.

WHAT IS THE ESTIMATED COST OF PRETERM BIRTH?

Costs for premature and low-birth-weight babies are considerably higher in terms of combined medical costs for the mother and child. According to the March of Dimes, a preterm birth costs $64,713, compared to $15,047 for an uncomplicated birth.[5]

Babies who are born preterm and survive face a greater risk of serious health problems. They have a higher risk of death or lifelong disabilities, such as:

- Learning disabilities,
- Mental retardation,
- Cerebral palsy,
- Lung and gastrointestinal problems,
- Vision and hearing loss.

There were 3,352 premature babies born alive in Milwaukee between 2009 and 2011. Based on $64,713 cost data from the March of Dimes, the total cost of prematurity for these 3,352 babies was **$216,917,976.**

A previous poor pregnancy outcome should be considered a paramount reason to get early and well-managed care with any subsequent pregnancies. Ideally, such care should begin right after the loss or poor outcome and contact should be maintained through to the next delivery.

— F. Broekhuizen, MD

WHAT ARE THE RISK FACTORS FOR PRETERM BIRTH?[6]

The March of Dimes reports that the cause of preterm birth is unknown in 40% of these births. However, there appears to be 'four main routes leading to spontaneous premature labor.' They are:

Infections and inflammation – Premature labor can be triggered by the body's natural immune response to certain genital, urinary tract and dental infections.

Maternal or fetal stress – Chronic psychosocial stress for the mother can result in the production of stress-related hormones which can trigger contractions. These same hormones can cause an insufficient blood flow to the placenta.

Bleeding – The uterus may bleed because of a placental abruption (where the placenta tears away from the uterine wall before delivery). Bleeding causes certain proteins to be released, forming clots which appear to stimulate uterine contractions.

Stretching – Excess amounts of amniotic fluid or more than one baby can cause the release of chemicals that stimulate uterine contractions.

Prematurity

WHICH WOMEN HAVE AN INCREASED RISK?[6]

Women who:

- Do not have prenatal care, do not have regular prenatal care, or who do not begin prenatal care until late in their pregnancy.
- Smoke tobacco or marijuana, drink alcohol or take illicit/non-prescription drugs.
- Are living with physical or emotional violence or abuse.
- Are exposed to high levels of stress, particularly without adequate resources to deal with that stress. Examples include poverty, racism and educational attainment, among others.
- Are exposed to environmental hazards.
- Have diabetes, hypertension or other chronic diseases including being overweight.
- Have infections, e.g., chlamydia, bacterial vaginosis, gonorrhea or a urinary tract infection (UTI).
- Have had pregnancies close together.
- Are having more than one baby.
- Have had a previous preterm birth.
  - 50% of mothers who had either an infant death or stillbirth had a previous preterm birth.
  - This is more than seven times the number seen in 2011 city of Milwaukee live births (6.5%).

Stillbirth

2009-2011 IDENTIFIED STILLBIRTHS (FETAL DEATHS)

The City of Milwaukee Health Department has classified the city's stillbirths based on the Stockholm classification of stillbirth.[7] The Stockholm classification places stillbirths into 17 groups identifying underlying conditions and associated diagnosis, including an 'undetermined' category. The most common conditions were placental insufficiency, incompetent cervix, birth defects/anomalies, infection and undetermined.

The fetal death rate is the ratio of fetal deaths divided by the sum of the births (the live births + the fetal deaths) in a given year.

The State of Wisconsin defines stillbirths as those deaths where a baby dies before birth (has not taken a breath or does not have a heartbeat at birth) and the baby weighs 350g and/or is 20 weeks or more gestational age.

Between 2009 and 2011, the city of Milwaukee had 205 stillbirths (fetal deaths).

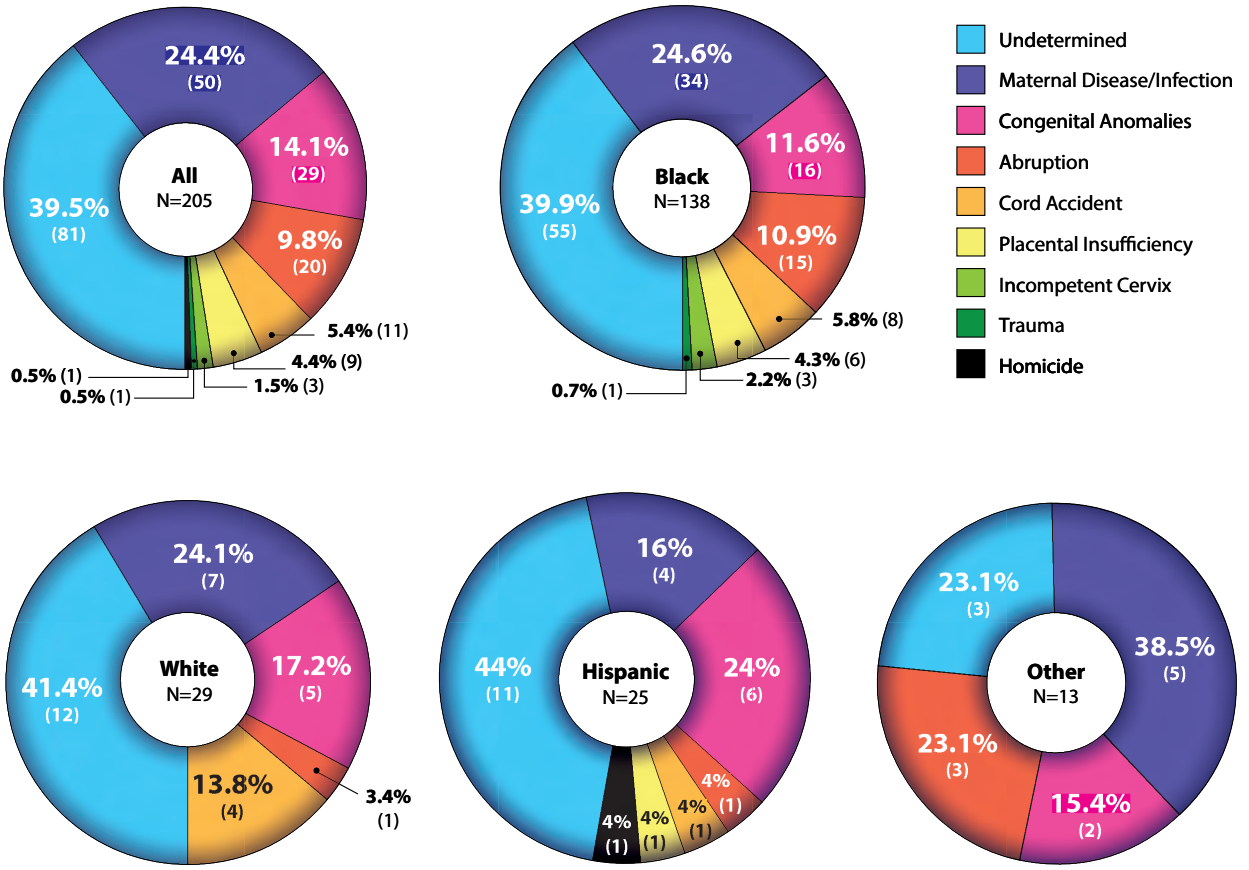
Undetermined accounted for 39.5% of all 2009-2011 stillbirths.

Maternal Disease/Infection accounted for 24.5% of all 2009-2011 stillbirths.

Congenital Anomalies accounted for 14.1% of all 2009-2011 stillbirths.

Please see charts on the next page.

2009-2011 STILLBIRTH CAUSE OF DEATH

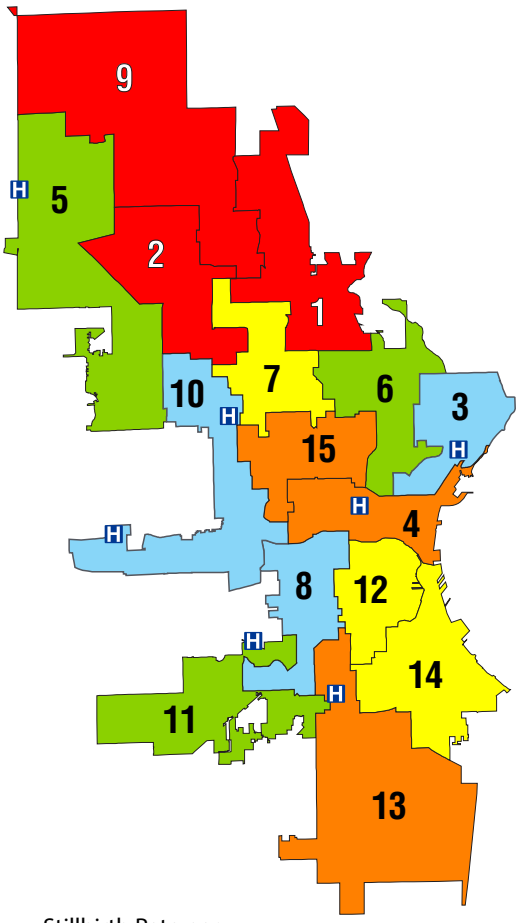


Stillbirth Cause of Death by Race/Ethnicity	Black		White		Hispanic		Other	
	N=138	Percent	N=29	Percent	N=25	Percent	N=13	Percent
Undetermined	55	39.9%	12	41.4%	11	44.0%	3	23.1%
Maternal Disease/Infection	34	24.6%	7	24.1%	4	16.0%	3	38.5%
Congenital Anomalies	16	11.6%	5	17.2%	6	24.0%	2	15.4%
Abruption	15	10.9%	1	3.4%	1	4.0%	3	23.1%
Cord Accident	6	4.3%	4	13.8%	1	4.0%	0	0.0%
Placental Insufficiency	8	5.8%	0	0.0%	1	4.0	0	0.0%
Incompetent Cervix	3	2.2%	0	0.0%	0	0.0	0	0.0%
Trauma	1	0.7%	0	0.0%	0	0.0	0	0.0%
Homicide	0	0.0%	0	0.0%	1	4.0	0	0.0%

- The category of 'other' race/ethnicity includes Hmong, Asian Indian, Burmese, Thai, Chinese, American Indian and Biracial. Mothers in this category have a higher percentage of maternal disease/infection and abruptions.
- A higher percentage of Hispanic stillborn infants had congenital anomalies.

Stillbirth

Stillbirth Rate by Aldermanic District
2009–2011

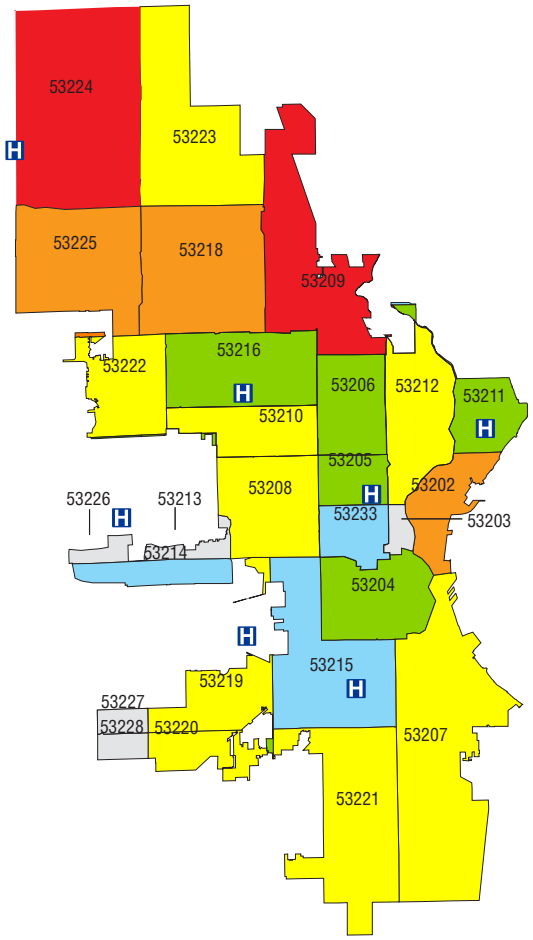


Stillbirth Rate per
1,000 Live Births

- 1.1 - 4.0
- 4.5 - 5.1
- 5.2 - 7.3
- 7.4 - 9.5
- 9.6 - 13.2
- Birthing Hospital

Note: 2012 aldermanic districts are used in this map.

Stillbirth Rate by ZIP Code
2009–2011



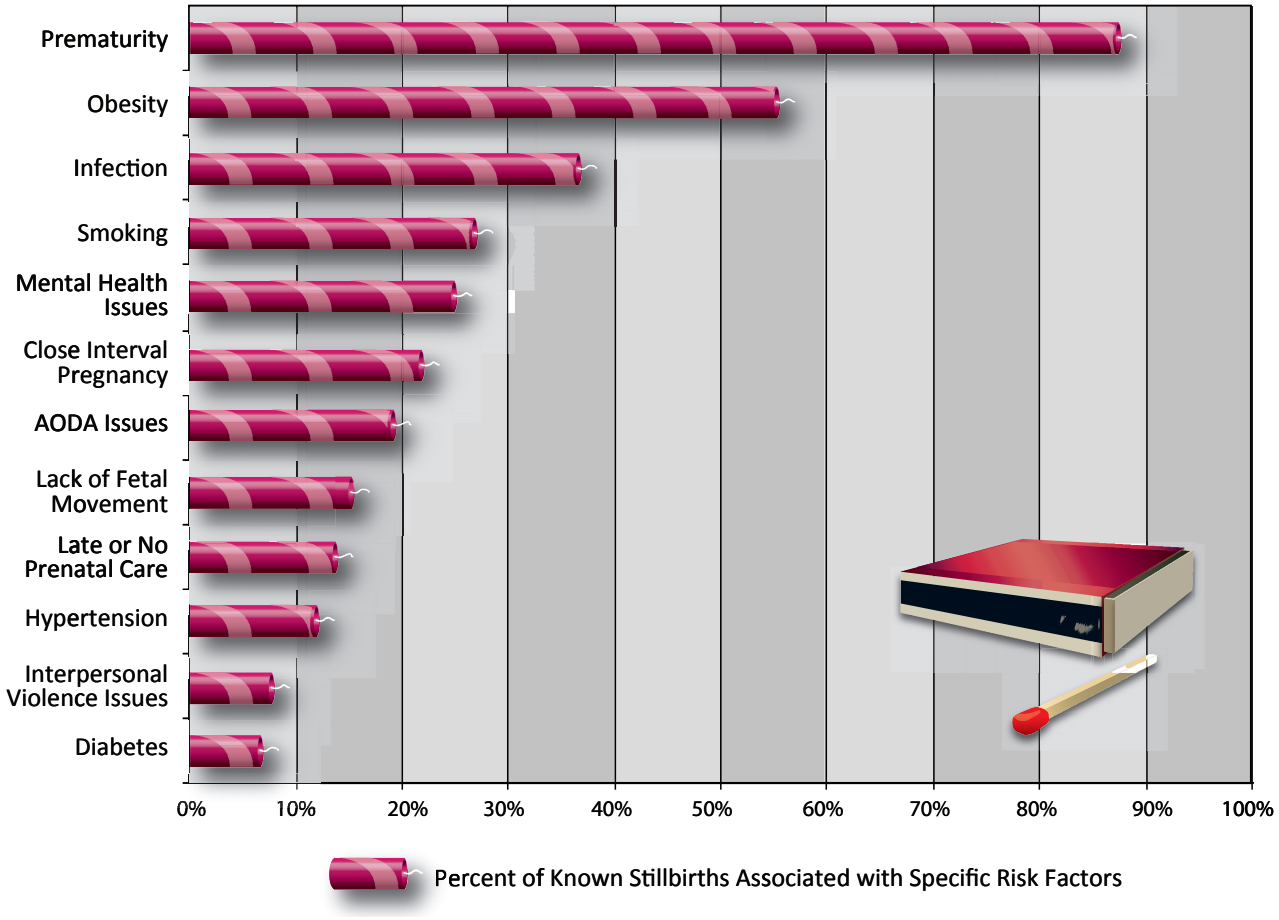
Stillbirth Rate per 1,000
Live Births

- 1.0 -3.6
- 3.6 - 5.8
- 5.8 - 7.4
- 7.5 - 9.9
- 9.9 - 12.3
- Not statistically significant*
- Birthing Hospitals

* Not statistically significant – These are shared Milwaukee city/Milwaukee county ZIP codes with insufficient live births from Milwaukee city for analysis.

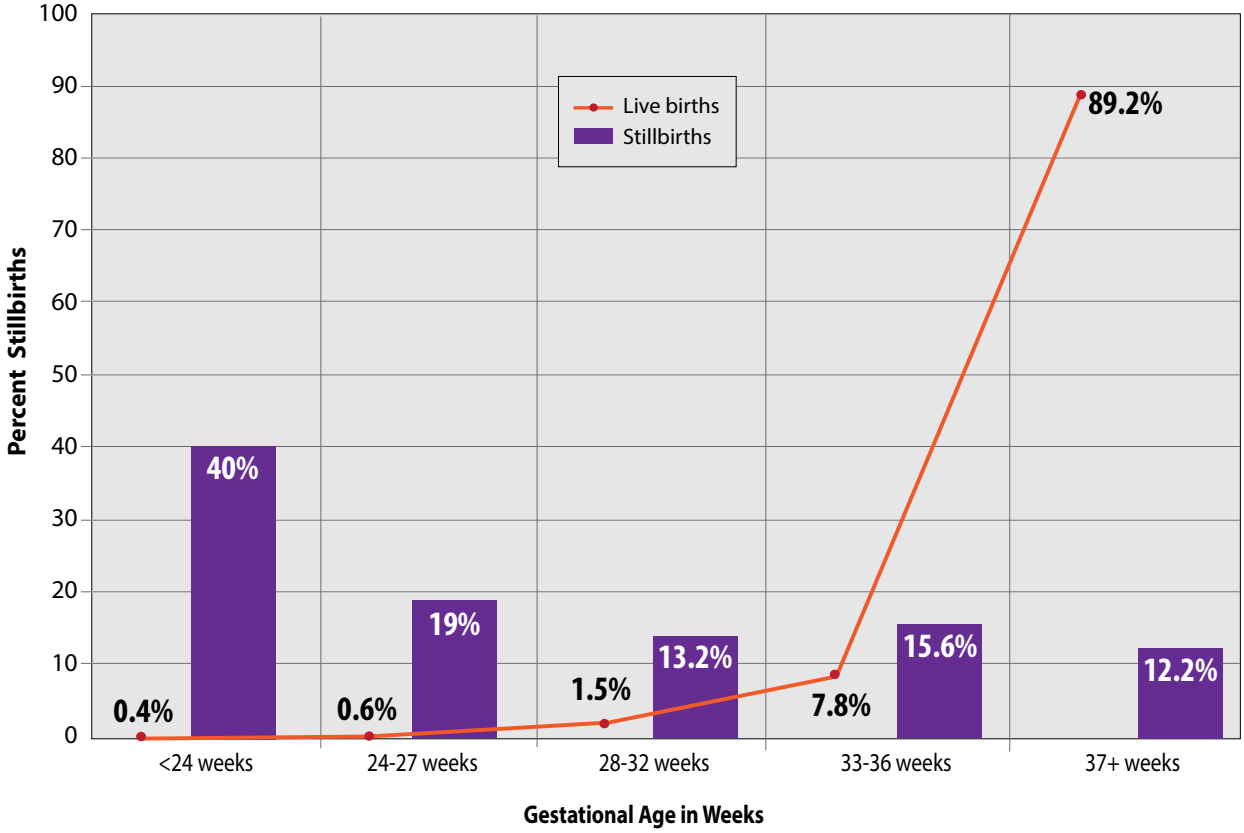
RISK FACTORS ASSOCIATED WITH STILLBIRTH

What is a risk factor? A risk factor is something that would make a stillbirth more likely to occur. These are the top 12 risk factors identified as contributing to stillbirths.



Risk Factor	% Stillbirth		Risk Factor	% Stillbirth
Prematurity	87.8%		AODA Isues	19.5%
Obesity	54.6%		Lack of Fetal Movement	15.6%
Infection	36.5%		Late or No Prenatal Care	14.1%
Smoking	26.8%		Hypertension	12.1%
Mental Health Issues	24.8%		Interpersonal Violence Issues	7.8%
Close Interval Pregnancy	21.9%		Diabetes	6.8%

Gestational Age Comparison (in weeks)
2009-2011 Stillbirths compared to Milwaukee Live Births
City of Milwaukee FIMR analysis



GESTATIONAL AGE

The gestational age of a pregnancy is defined as the number of weeks since the mother's last menstrual period which is the time when the baby grows and develops between conception and birth. Infants born before 37 weeks are considered premature.

Prematurity is the number one cause of stillbirth in the city of Milwaukee. Preterm birth and stillbirth is a complex problem requiring multidisciplinary research and creative solutions. "Globally, a staggering 2.6 million infants die just before birth."[8] In Milwaukee, 87.8% of 2009-2011 stillbirths were born preterm (before 37 weeks gestation.)

MATERNAL SMOKING

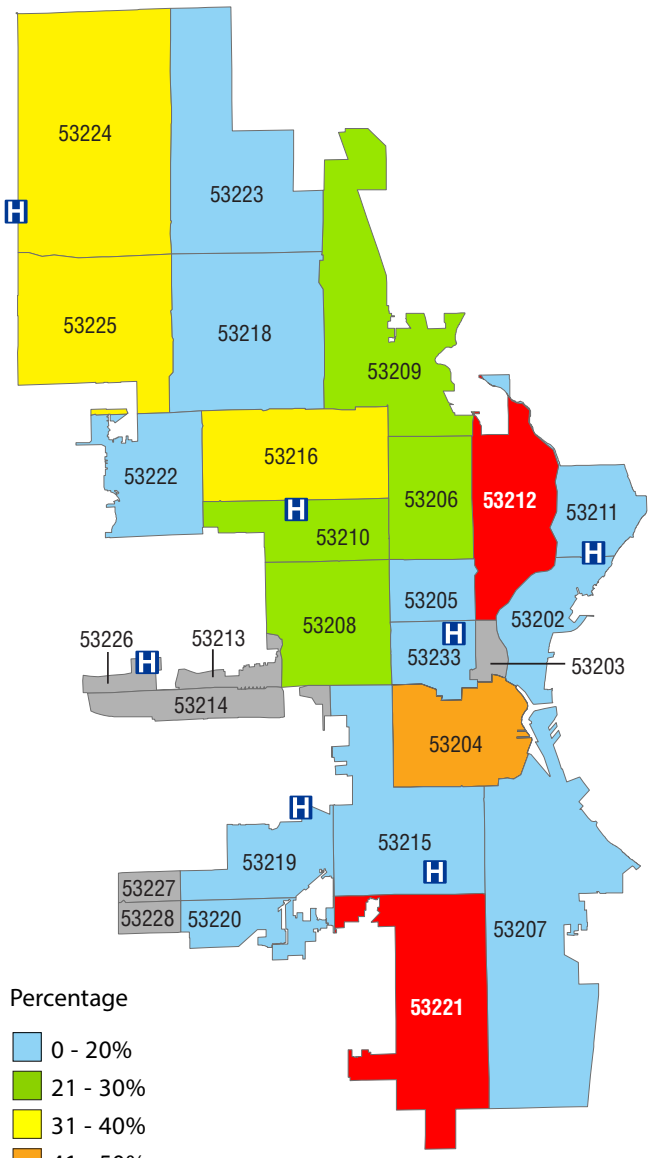
Tobacco

Please see map on next page.

Smoking cessation is one of the principal lifestyle changes a woman can make to reduce the risk of stillbirth. A 2009 British Medical Journal study indicated that "smoking during pregnancy accounted for 38% of the disparity in stillbirths and may increase the socio-economic inequalities in stillbirths and infant deaths. Preterm delivery, low-weight full term babies, stillbirth and infant death all occur more frequently among mothers who smoke during pregnancy than among those who do not."[9]

- Between 2009 and 2011, maternal smoking was seen in 12.5% of city of Milwaukee live births.
- In this same time period, the percent of smoking mothers of all stillborn infants was 26.8%, over two times greater than the percent seen in mothers of live born infants.

Tobacco Use by Mothers of Stillborn Infants by ZIP Code, 2009–2011

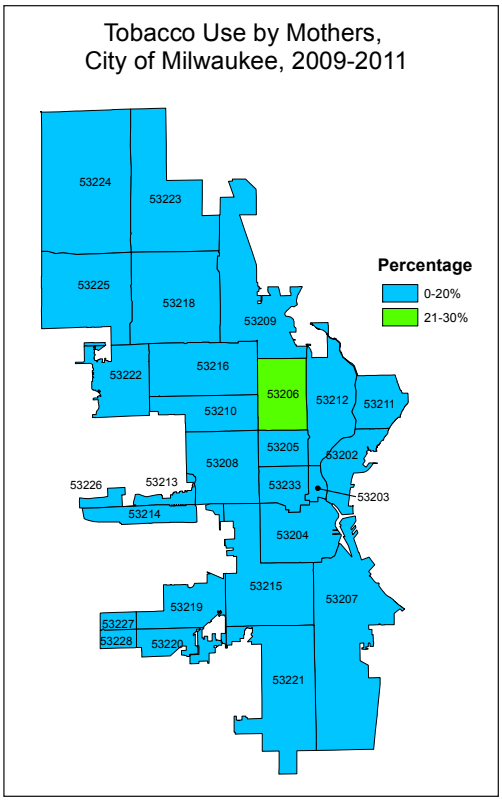


* Not statistically significant – These are shared Milwaukee city/Milwaukee county ZIP codes with insufficient live births from Milwaukee city for analysis.

Marijuana

Some mothers may feel it is acceptable to smoke marijuana because it is a 'natural' product and therefore less harmful than tobacco. The scientific literature, however, suggests otherwise.`[10] Marijuana use during pregnancy has been associated with behavior and cognitive problems including impulsivity, inattention and academic underachievement.

In this same time period, the percent of mothers of stillborn babies who smoked either tobacco or marijuana (or both) was 35.1%, nearly three times the percentage found among mothers of live births.



CHRONIC MATERNAL CONDITIONS

Diabetes

Fourteen of the 205 (6.8%) mothers of stillborn infants had Type I or Type II insulin dependent diabetes during their pregnancies. This is six times the percent of mothers of 2009-2011 live births (1.1%) with Type I or Type II diabetes. American Congress of Obstetricians and Gynecologists (ACOG) guidelines[11] include counseling on the following:

- Maternal complications associated with diabetes which includes cardiovascular disease, hypertension, preeclampsia and polyhydramnios.
- Complications for the baby including birth defects and macrosomia.
- Beginning and maintaining glycemic control throughout the pregnancy through:
  - blood glucose monitoring,
  - diet, and
- exercise.

A 2011 Institute of Medicine recommendation suggested that "screening is needed for gestational diabetes in pregnant women between 24 and 28 weeks of gestation and at the first prenatal visit for pregnant women identified to be at high risk for diabetes." [12]

Hypertension

In twenty-five of the 205 (12.2%) stillbirths, the mothers had chronic hypertension during their pregnancy. This is four times the percent of mothers of 2009-2011 live births (3.1%) with chronic hypertension. High blood pressure during pregnancy can have serious negative effects[13] including:

- Less blood flow to the placenta and less oxygen/nutrients to the infant.
- Compromised growth of the baby as the placenta may not be able to support fetal development.
- As a risk factor for pre-eclampsia, a serious condition that can put stress on the kidneys causing headaches, visual problems, and swelling of the hands and face.

Obesity

The prevalence of obesity has increased dramatically in the general population. Nearly 61% (n=111) of mothers of stillborn infants, whose Body Mass Index (BMI) could be calculated, were overweight or obese at the beginning of their pregnancies.

- 72% of mothers of stillborn infants with chronic hypertension were obese during their pregnancy.
- 78.6% of mothers of stillborn infants with diabetes were obese during their pregnancy.

A 2013 paper in the British Journal of Obstetrics and Gynecology[14] compared women of normal weight to women who were overweight or obese. Overweight/obese women were at a significantly increased risk of:

- Hypertensive disorders of pregnancy,
- Diabetes,
- Induction of labor,
- C-section,
- Post-partum hemorrhage,
- Preterm delivery.

Infection

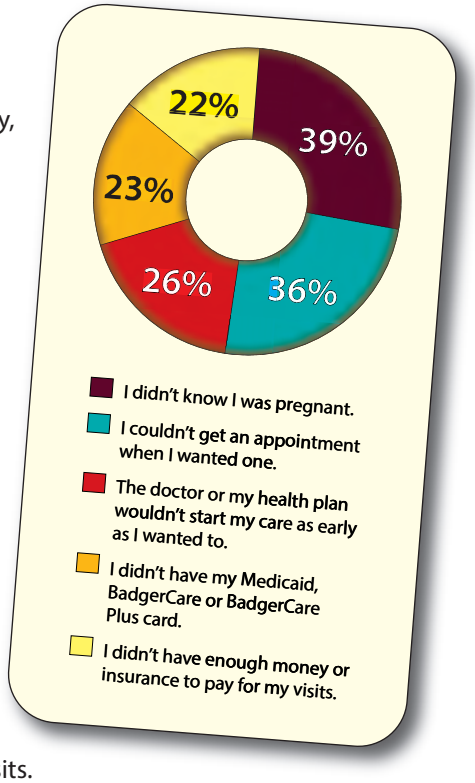
Sexually transmitted infections (STI), bacterial vaginosis (BV) and urinary tract infections (UTI) are serious risk factors for stillbirth. About 45 percent (n=75) of mothers of stillborn infants had an STI or UTI during the pregnancy. This is nearly four times the percent of mothers of live births who had an infection during pregnancy (11.5%). STI's and UTI's can lead to many maternal complications such as:

- Infection of the membranes surrounding the fetus
- Premature rupture of the membranes
- Premature labor and delivery
- Post-delivery infection of the uterus
- Postpartum complications for the baby

A test of cure is necessary to ensure that the infection has been eliminated. In 2010, the Expedited Partner Therapy law went into effect.15 This law makes it possible for medical providers to provide treatment for STIs for the sexual partners of their patients without medical evaluation.

LATE OR NO PRENATAL CARE

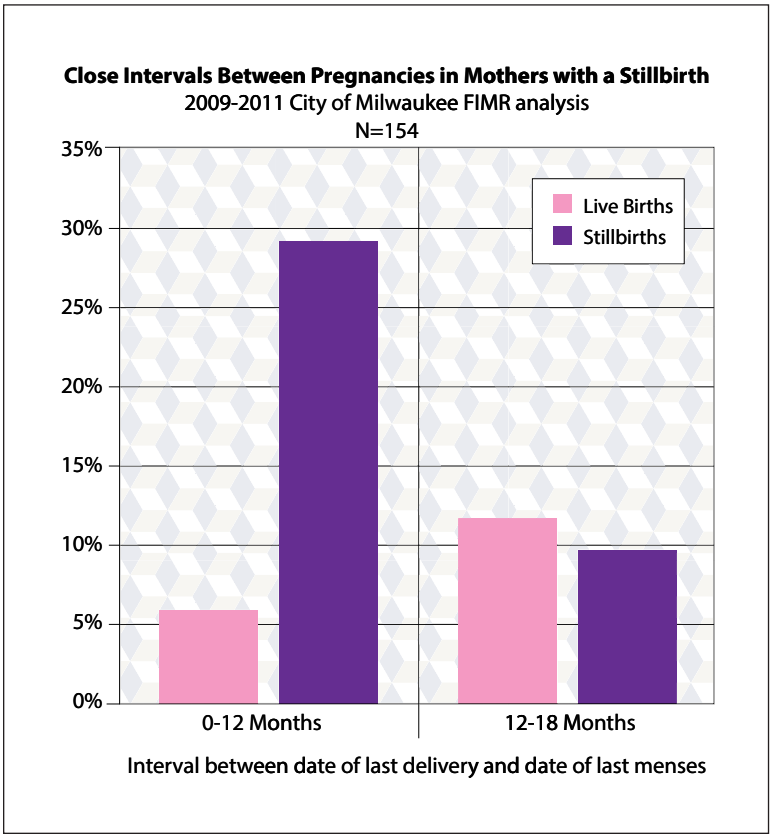
Adequate prenatal care is determined not only by the onset of care, and the number of visits to a provider that a woman has during her pregnancy, but also by the quality of care delivered and the respect shown by healthcare providers. Too often, unfortunately, the only information we have is when care started and how many prenatal visits a woman received.



Over 14% (n=29) of mothers of stillborn infants did not start their prenatal care until the 3rd trimester or had no prenatal care at all. This is nearly three times more than the mothers of live born infants (4.9%) for this same three year period. In Wisconsin, all pregnant women qualify for insurance coverage. According to the Wisconsin Pregnancy Risk Assessment Monitoring System (PRAMS) for 2009-2011)[16], the five most common reasons that women report for not receiving prenatal care as early as wanted or not at all are:

- 39% – I didn't know I was pregnant.
- 36% – I couldn't get an appointment when I wanted one.
- 26% – The doctor or my health plan wouldn't start my care as early as I wanted to.
- 23% – I didn't have my Medicaid, BadgerCare or BadgerCare Plus card.
- 22% – I didn't have enough money or insurance to pay for my visits.

CLOSE INTERVAL PREGNANCY



Short intervals between delivery and the next pregnancy are linked to prematurity, intentional and unintentional injuries, and Sudden Unexpected Infant Deaths. A close interval pregnancy is defined as a pregnancy with less than 18 months between the delivery and the date of the last menstrual period signaling beginning of the next pregnancy. In more than 29.2% of stillbirths, the mother had had a delivery less than 12 months prior. In another 9.7% of stillbirths, the mother had had a delivery less than 18 months prior. A Wisconsin PRAMS survey showed that 37% of Wisconsin mothers surveyed had an unintended pregnancy. [17]

FIMR began tracking postpartum healthcare provider visits and birth control documentation in 2011. Birth control was not mentioned or documented in the hospital chart or postpartum provider notes in 68.4% of mothers who had had a close

interval birth. Only 26.3% of these mothers of stillbirths even had a documented postpartum visit. Postpartum visits[18] are needed to:

- Discuss complications that occurred during pregnancy.
- Plan for follow-up of any medical and mental health conditions.
- Discuss sexual activity and plans for contraception.

When a stillbirth has occurred, it is also necessary to:

- Discuss the baby's death and the cause of death.
- Try to answer the question "Will it happen again?"

As shown by the quotes below, providers seem to give inconsistent messages on birth control:

1) A doctor wrote in the medical record that he "discussed contraception. The patient desires to start trying for pregnancy again. We discussed to wait two cycles until trying."
2) A doctor noted in the medical record that mom had a lot of questions. "This mom is unsure if she wants to get pregnant again soon or not for many years. If soon, needs to allow at least 2-3 months before attempting pregnancy to allow periods to return to normal."
3) A doctor wrote in the medical record that mom "would like to contemplate a pregnancy. I recommend that she waits 3-4 months and continue her prenatal vitamins."

Mothers may hear or interpret provider messages differently:

1) When interviewed, one mother said that she was told she only had to wait 2-3 months before trying to become pregnant again after the loss.
2) One mother said during an interview that "It doesn't matter if I get pregnant, or not."
3) One mother told an interviewer that "I am not having sex, I don't need birth control. I never had a postpartum visit."

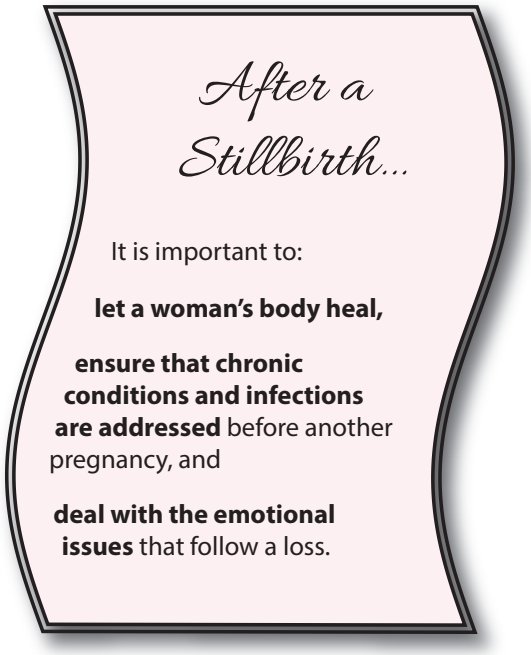
Data on birth control discussions from FIMR abstractions

After a stillbirth, it is important to:

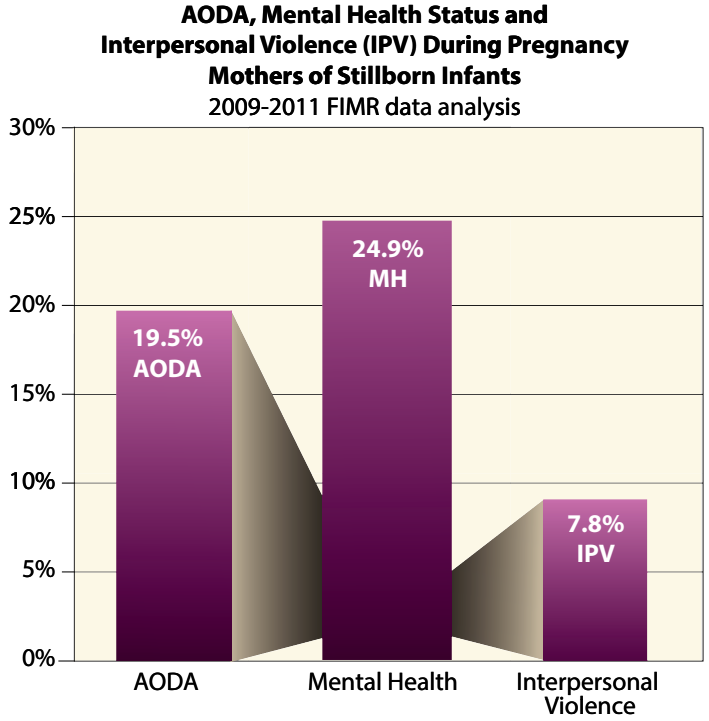
- let a woman's body heal,
- ensure that chronic conditions and infections are addressed before another pregnancy, and
- deal with the emotional issues that follow a loss.

Intraconceptional birth control measures are important to this healing.

On average, only about 30% (range 26.5% to 38.5%) of the four major delivering hospitals in Milwaukee had documented that birth control was discussed with a woman after a stillbirth.



ALCOHOL AND OTHER DRUGS OF ABUSE (AODA), MENTAL HEALTH (MH) AND INTERPERSONAL VIOLENCE (IPV) CONCERNS



Alcohol and Other Drugs of Abuse (AODA)

Alcohol and drug use increases the risk of miscarriage, stillbirth, preterm birth and low birthweight, and can negatively impact fetal and infant development. Maternal alcohol or drug use was seen in nearly 20% of mothers who had a stillbirth.

Mental Health

Wisconsin PRAMS data indicate that 17% of mothers report depression and/or anxiety three months before becoming pregnant 16 and the perinatal mental health literature states that mental health issues are typically seen in 10-15% of pregnant women.[19] Nearly 25% of Milwaukee mothers who had had a stillbirth had reported mental health issues.

Interpersonal Violence

Interpersonal violence and abuse refers to violence and abuse that occurs between people who know each other. It can occur within or outside a family setting. Interpersonal violence was reported in only 7.8% of mothers who had a stillbirth. Starting in 2011, FIMR began tracking if mothers were asked about their safety either at the delivering hospital or prenatally by their providers. Over 65% of the mothers of stillborn infants were never asked. A 2011 Institute of Medicine recommendation asks that providers "screen and counsel for interpersonal and domestic violence. Screening and counseling involves elicitation of information from women and adolescents about current and past violence and abuse in a culturally sensitive and supportive manner to address current health concerns about safety and other current or future health problems."[12] The National Coalition against Domestic Violence states that "most cases of domestic violence are never reported."[20] Starting in 2011, FIMR began tracking if mothers were asked about their safety either at the delivering hospital or prenatally by their providers.

Over 67% of these mothers were never asked.

Fetal Movement

Fetal movement is defined as the movement the mother feels as the baby is growing. Kicks, elbow juts, and tumbling are just some of the descriptions given to fetal movement. Most healthcare providers ask that their patients begin counting infant kicks by the 26th week of pregnancy or earlier. The American Congress of Obstetricians (ACOG) recommends noting the time it takes for a baby to make 10 movements.[21] For 2009-2011, 32 of the 100 mothers of stillborn infants at 26 weeks gestation or greater had not felt any fetal movement for 24 hours or longer before they notified their healthcare provider.

PROVIDER/ HOSPITAL STILLBIRTH FOLLOW-UP

Placental examination and follow-up laboratory testing are non-invasive methods which can often contribute to a determination of cause of death, especially when an autopsy will not be performed. In Milwaukee, between 2009-2011:

- Only 35.6% of stillbirths received an autopsy.
- Maternal placentas were analyzed in 68.7% of stillbirths.
- In 11.7% of stillbirths there was no documented laboratory follow-up of any kind. Common laboratory follow-ups include testing for:
  - Coagulation issues,
  - Lupus titers,
  - Viral analysis,
  - Thyroid problems,
  - Diabetes, or
  - Genetic anomalies.

Provider/Hospital Stillbirth Follow-up	Hospital A N=38	Hospital B N=50	Hospital C N=75	Hospital D N=20	Hospital E N=6	Hospital F N=9
% Placental Analysis done	60.5%	42.0%	97.3%	55.0%	100.0%	88.9%
% Autopsy done	26.3%	30.0%	49.3%	20.0%	33.3%	22.2%
% Follow-up Laboratory Studies done	63.2%	44.0%	32.0%	65.0%	0.0%	33.3%

THE POTENTIAL BENEFITS

of a

STILLBIRTH ASSESSMENT ARE:

- **To let the parents know why** a baby was stillborn
- **To find a diagnosis** which may affect subsequent reproductive decisions or provide information about the health of other siblings
- **To serve as a means of providing a foundation** for the assessment of quality prenatal and perinatal care for this baby and for any subsequent pregnancy

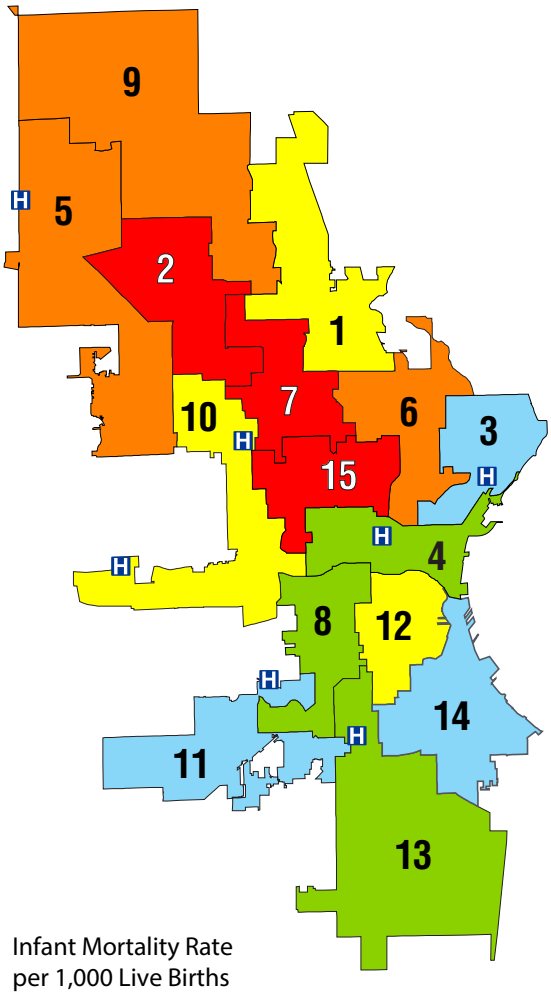
Jason Jarzembowski, MD, Children's Hospital of Wisconsin

Infant Death

The State of Wisconsin defines an infant death as a death occurring before a child's first birthday if the child was born alive, without regard to gestational age or weight.

The infant mortality rate is the ratio of infant deaths divided by the number of live births in a given year.

Infant Deaths by Aldermanic District

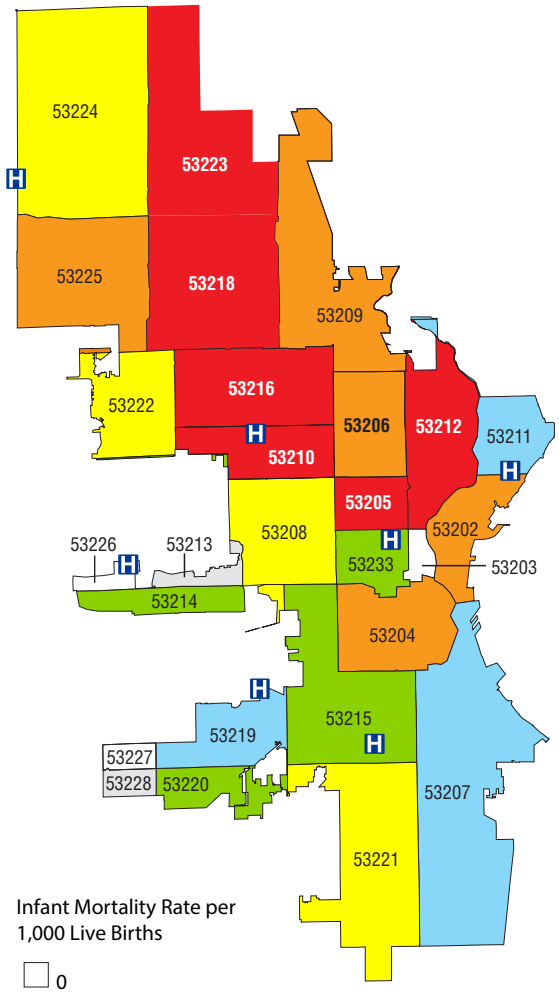


Infant Mortality Rate per 1,000 Live Births

- 4.6 - 6.4
- 6.5 - 7.4
- 7.5 - 9.3
- 9.4 - 13.6
- 13.7 - 20.7
- Birthing Hospital

Note: 2012 aldermanic districts are used in this map.

Infant Deaths by ZIP Code



Infant Mortality Rate per 1,000 Live Births

- 0
- 1.0 - 3.9
- 4.0 - 6.8
- 6.9 - 9.0
- 9.0 - 12.8
- 12.9 - 16.3
- Not statistically significant*
- Birthing Hospitals

* Not statistically significant – These are shared Milwaukee city/Milwaukee county ZIP codes with insufficient live births from Milwaukee city for analysis.

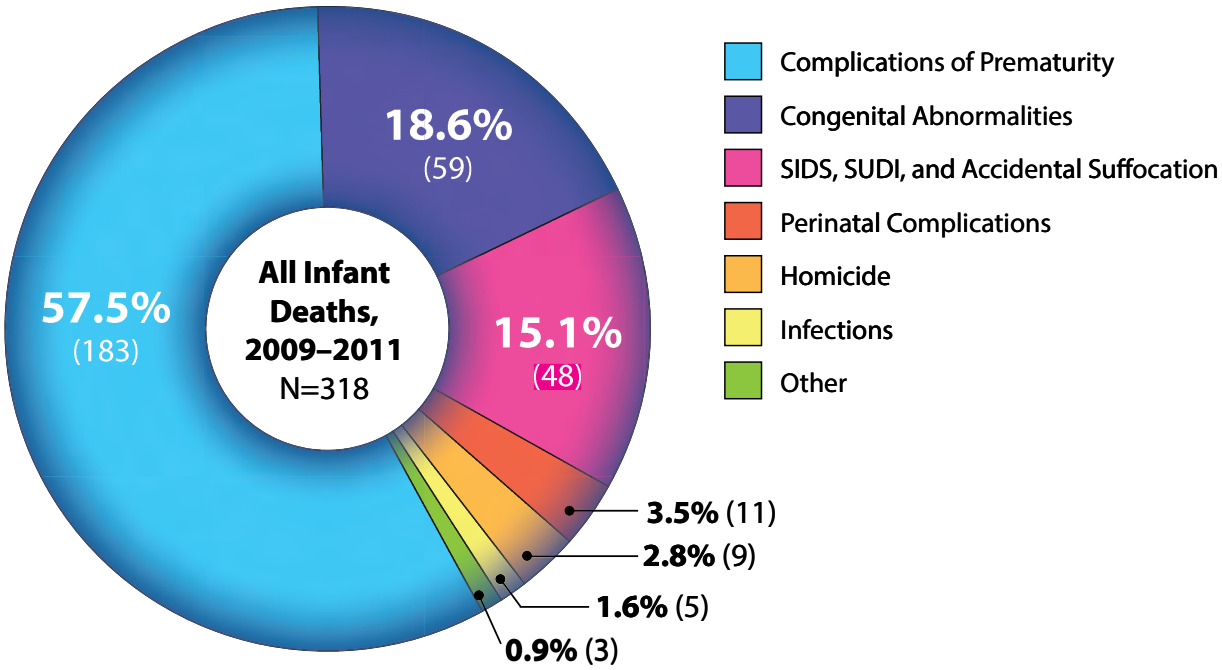
Infant Death: Causes

BETWEEN 2009 AND 2011, THE CITY OF MILWAUKEE HAD 318 INFANT DEATHS.

Complications of prematurity accounted for 57.5% of all 2009-2011 infant deaths.
Subcategories of prematurity include:

- **Maternal complications,** e.g.. diabetes, hypertension (18.6%)(n=59)
- **Placenta, cord or membrane infections** (18.2%)(n=58)
- **Short gestation, low birth weight** (7.2%)(n=23)
- **Complications of twin, triplet births** (6.9%)(n=22)
- **Complication of preterm birth,** i.e. sepsis and intraventricular (brain) hemorrhage (6.6%)(n=21)
- **Congenital abnormalities** accounted for 18.6% of all 2009-2011 infant deaths
- **Sudden Infant Death Syndrome, Sudden Unexpected Death in Infancy (SUDI) and Accidental Suffocation** accounted for 15.1% of all 2009-2011 infant deaths.

2009–2011 City of Milwaukee Infant Deaths

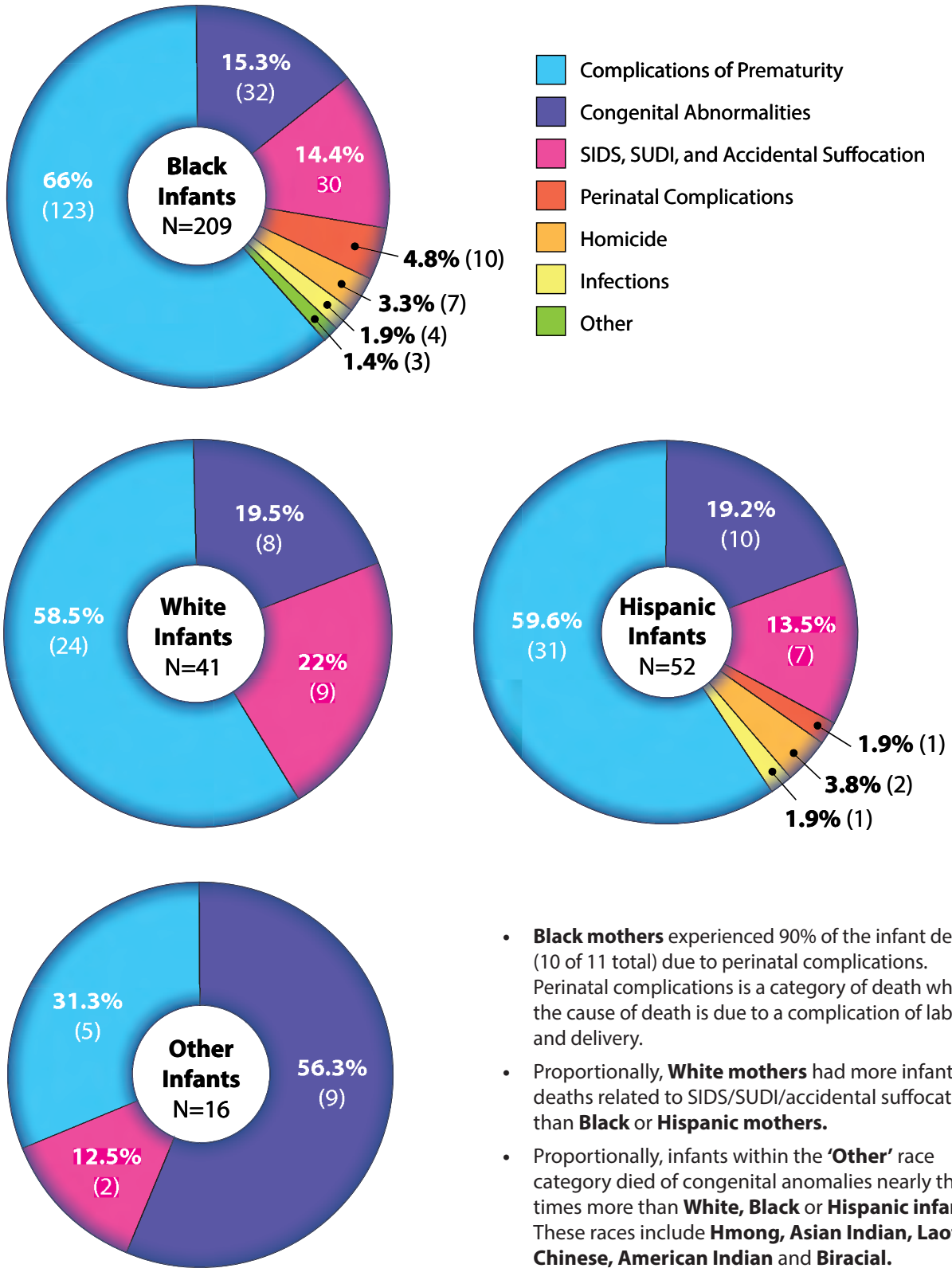


Infant Death – Cause of Death by Race/Ethnicity

	Black		White		Hispanic		Other	
	N=209	Percent	N=41	Percent	N=52	Percent	N=16	Percent
Complications of Prematurity	123	66.0%	24	58.5%	31	59.6%	5	31.3%
Congenital Anomalies	32	15.3%	8	19.5%	10	19.2%	9	56.3%
SIDS, SUDI and Accidental Suffocation	30	14.4%	9	22.0%	7	13.5%	2	12.5%
Perinatal Complications	10	4.8%	0	0.0%	1	1.9%	0	0.0%
Homicide	7	3.3%	0	0.0%	2	3.8%	0	0.0%
Infections	4	1.9%	0	0.0%	1	1.9%	0	0.0%
Other	3	1.4%	0	0.0%	0	0.0%	0	0.0%

Infant Death: Causes

2009–2011 Cause of Infant Death by Race/Ethnicity

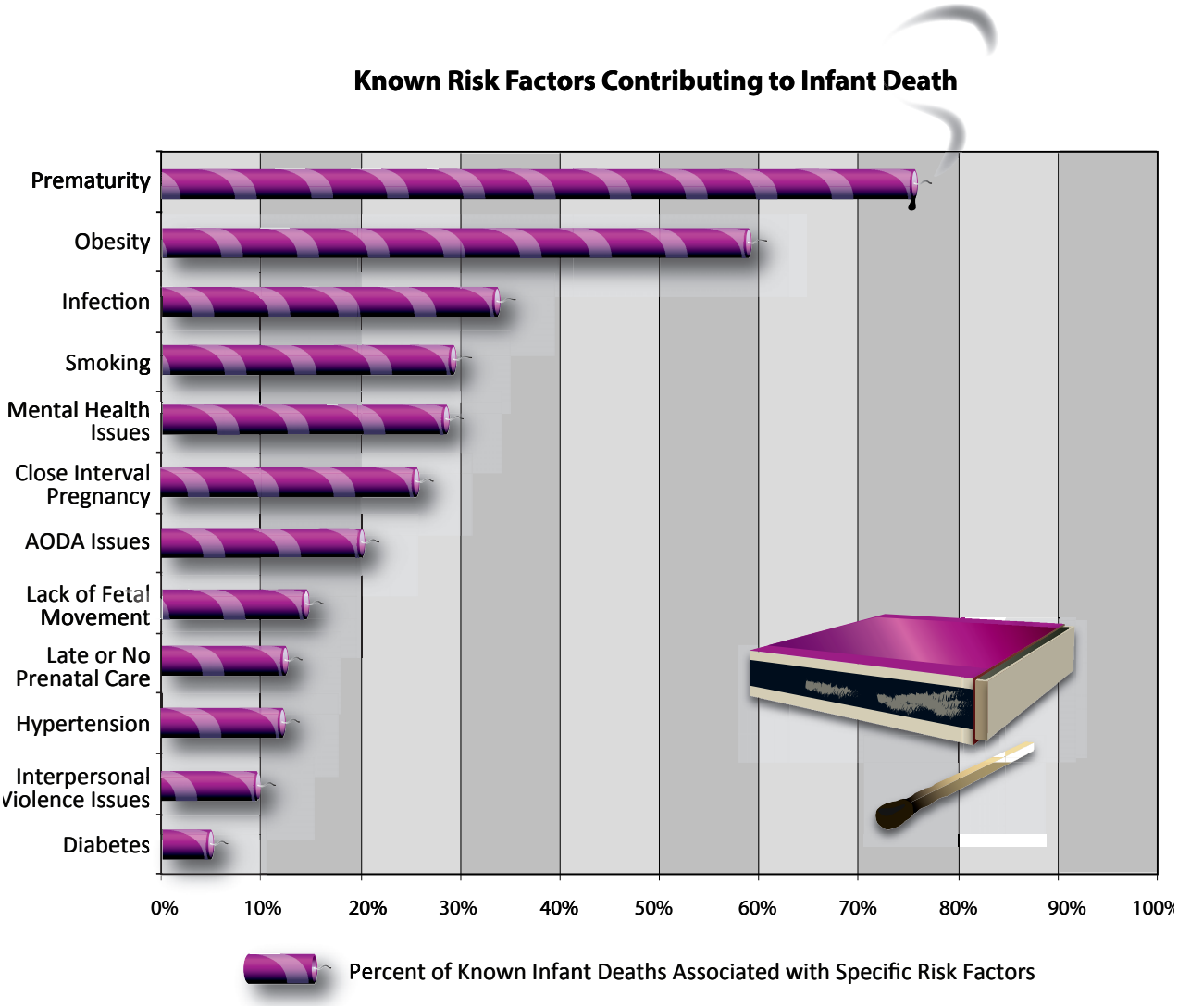


- **Black mothers** experienced 90% of the infant deaths (10 of 11 total) due to perinatal complications. Perinatal complications is a category of death where the cause of death is due to a complication of labor and delivery.
- Proportionally, **White mothers** had more infant deaths related to SIDS/SUDI/accidental suffocation than **Black** or **Hispanic mothers.**
- Proportionally, infants within the **'Other'** race category died of congenital anomalies nearly three times more than **White, Black** or **Hispanic infants.** These races include **Hmong, Asian Indian, Laotian, Chinese, American Indian** and **Biracial.**

RISK FACTORS ASSOCIATED WITH INFANT DEATH

What is a risk factor?

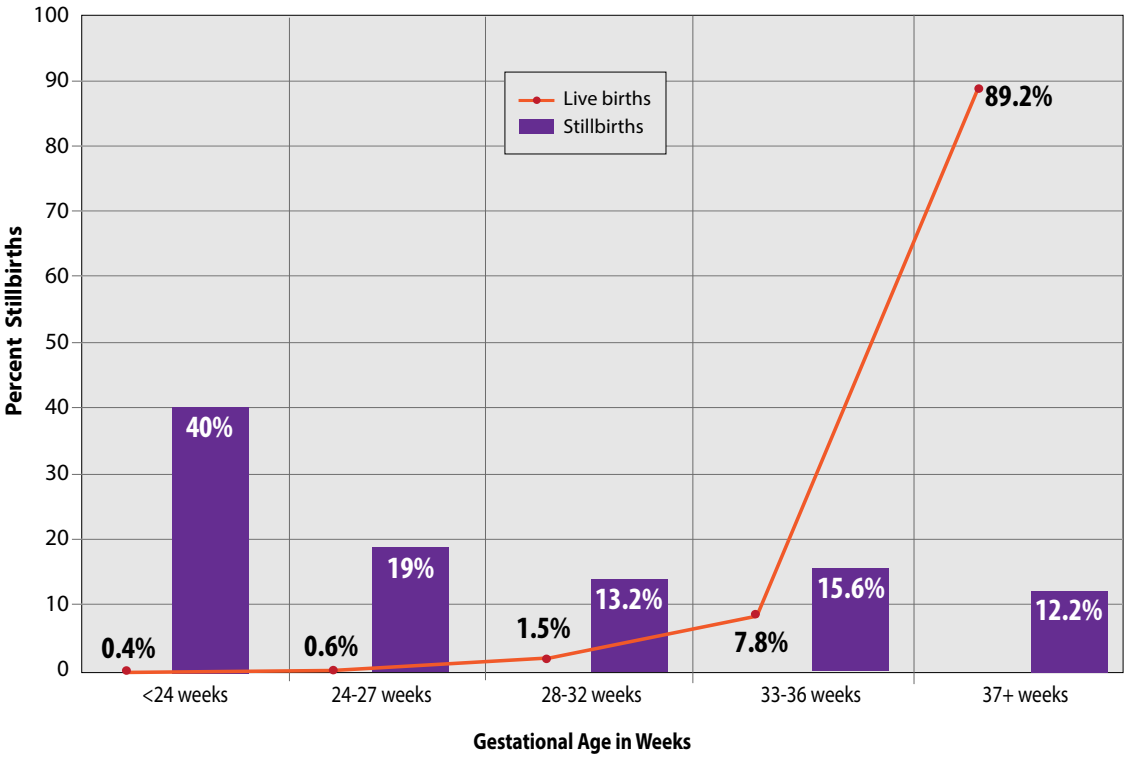
A risk factor is something that would make a baby more likely to die. These are the top 12 risk factors identified as contributing to infant death.



GESTATIONAL AGE AND INFANT DEATH

The gestational age of a pregnancy is defined as the number of weeks since the mother's last menstrual period. This is the time when the baby grows and develops between conception and birth. Infants born before 37 weeks are considered premature.

Gestational Age Comparison (in weeks)
2009-2011 Stillbirths compared to Milwaukee Live Births
City of Milwaukee FIMR analysis



What are the long-term health problems of preterm babies who survive?

Preterm babies are not just small 'normal' babies. They can have serious health concerns which include:

- Inability to maintain body temperature
- Hypoglycemia (low blood sugar)
- Breathing problems
- Unstable heart rhythm
- Apnea episodes (not breathing)
- Infections and jaundice

The importance of 'early term' births

This analysis shows that more than 23% (over 7,000 babies) of city of Milwaukee infants were born between 37 and 38 weeks in 2009 and 2011. These births have been labeled 'early term.' The National Institutes of Health reported in 2011 that these babies are at a "higher risk of dying before age 1 than infants born 39+ weeks gestation."[22] The March of Dimes and the American Congress of Obstetricians and Gynecologists (ACOG) reported that early term babies are more likely to be admitted to an intensive care unit, have a higher risk of breathing problems, feeding issues, and hearing and vision complications than those infants who are born 39 weeks or greater. Both the March of Dimes and the American Congress of Obstetricians and Gynecologists[23 24] are working to 'eliminate unnecessary early births.' Although some mothers may want to have their labor induced for a variety of non-health related reasons, it is important for providers to educate mothers and fathers on the benefits of birth at or after 39 weeks gestation.

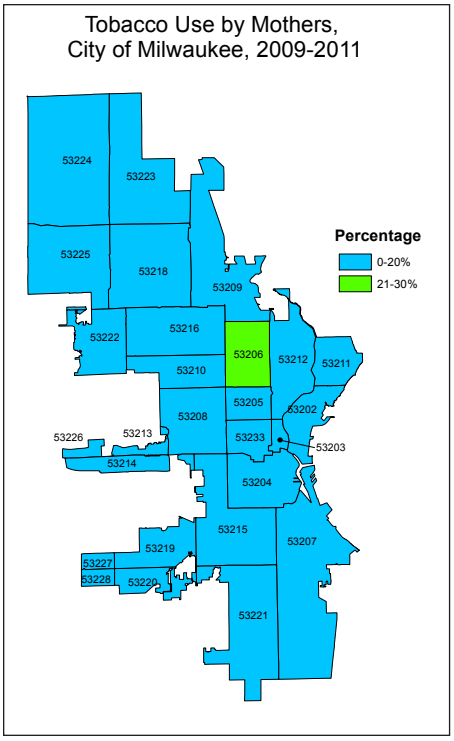
MATERNAL SMOKING

Tobacco

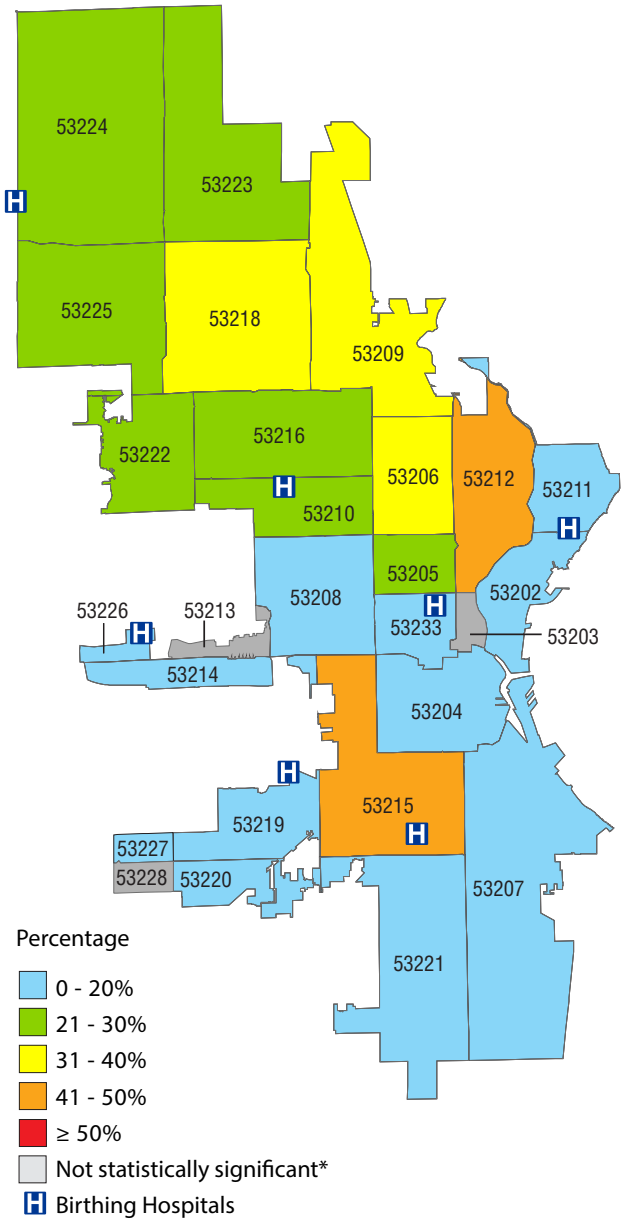
Smoking cessation is one of the principal modifiable risk factors in the reduction of infant death. A 2009 Annie E. Casey Foundation report said that the infant mortality rate for infants of mothers who smoked was 74% higher than the rate for nonsmokers.[25] Smoking increases the risk of infant death. Preterm delivery, low-weight full term babies, stillbirth and infant death all occur more frequently among mothers who smoke during pregnancy than among those who do not.

Between 2009 and 2011, maternal smoking was documented in 12.5% of City of Milwaukee live births.

- In this same time period, the percent of mothers of infants who died who reported smoking was two times greater at 28.9%.
- In this same time period, the percent of mothers of stillborn babies who smoked either tobacco or marijuana (or both) was 35%, nearly three times the percentage found among mothers of live births.



Tobacco Use by Mothers who had an Infant Death by ZIP Code, 2009–2011



* Not statistically significant – These are shared Milwaukee city/Milwaukee county ZIP codes with insufficient live births from Milwaukee city for analysis.

Marijuana

Mothers may feel it is acceptable to smoke marijuana because it is a 'natural' product and therefore less harmful than tobacco. The scientific literature, however, suggests otherwise. Marijuana use during pregnancy has been associated with behavior and cognitive problems including impulsivity, inattention and academic underachievement.

- Among mothers who had an infant death, the percentage reporting both tobacco and marijuana use during pregnancy was 34.6%, nearly three times the percentage found among mothers of live births.

CHRONIC MATERNAL CONDITIONS

Diabetes

Seventeen of 318 (5.3%) of mothers who experienced an infant death had Type I or Type II insulin dependent diabetes during their pregnancy. This is five times the percent of mothers of 2009-2011 live births (1.1%) with Type I or Type II diabetes.

The American Congress of Obstetricians and Gynecologists (ACOG) guidelines28 include counseling on the following:

- Maternal complications associated with diabetes which include cardiovascular disease, hypertension, preeclampsia and polyhydramnios
- Complications for the baby including birth defects and macrosomia
- Beginning and maintaining glycemic control throughout the pregnancy by
- blood glucose monitoring
- diet
- exercise

A 2011 Institute of Medicine recommendation suggested that '"screening is needed for gestational diabetes in pregnant women between 24 and 28 weeks of gestation and at the first prenatal visit for pregnant women identified to be at high risk for diabetes."[12]

Hypertension

Thirty three of 318 (10.4%) of the mothers of infants who died had chronic hypertension during their pregnancy. This is more than 3 times the percent of mothers (3.1%) of 2009-2011 Milwaukee live births with chronic hypertension.

- Chronic hypertension increases the risk of pre-eclampsia, a serious condition that can put stress on the kidneys causing headaches, visual problems, and swelling of the hands and face.
- High blood pressure during pregnancy can compromise the health of baby by restricting blood flow to the placenta, thereby decreasing oxygen and nutrients to the fetus.[26]

Obesity

More than 65% (n=189) of mothers with an infant death, whose Body Mass Index (BMI) could be calculated, were overweight or obese at the beginning of their pregnancies.

- 62.5% of mothers of infant deaths with chronic hypertension were obese during their pregnancy.
- 70.6% of mothers of infant deaths with diabetes were obese during their pregnancy.

A 2013 paper in the British Journal of Obstetrics and Gynecology[14] compared women of normal weight to women who were overweight or obese. Overweight/obese women were at a significantly increased risk of:

- Hypertensive disorders of pregnancy,
- Diabetes,
- Induction of labor,
- C-section,
- Post-partum hemorrhage,
- Increased risk of preterm delivery.

Infants of overweight/obese women were at increased risk of macrosomia (large for gestational age) and were at an increased risk of admission to a NICU. [27] Obesity during pregnancy is an issue throughout the state of Wisconsin. Data from Wisconsin PRAMS indicate that 48% of mothers were overweight or obese at the time of delivery. [16]

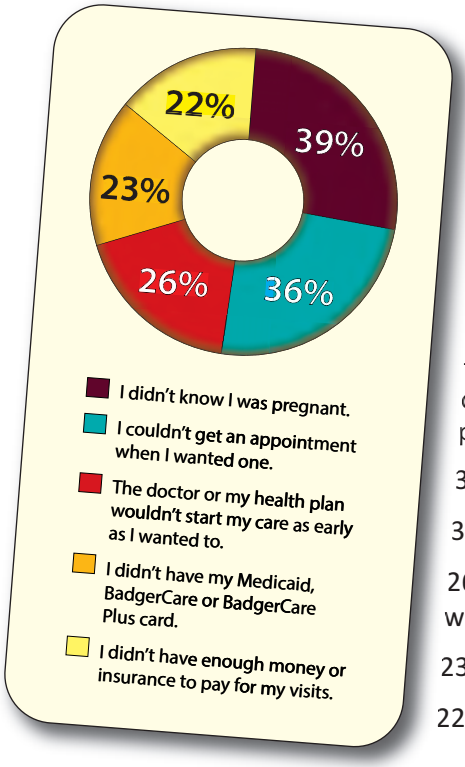
Infant Death: Infection, Late or No Prenatal Care

INFECTION

Sexually transmitted infections (STI), bacterial vaginosis (BV) and urinary tract infections (UTI) are serious risk factors for infant death, particularly for prematurity. An STI or UTI was seen in nearly 45% (n=108) of the mothers of infants who died and who were born before 37 weeks gestation. This is nearly four times the percent of mothers of live births with an infection during pregnancy (11.5%). STIs and UTIs can lead to many maternal complications such as:

- Infection of the membranes surrounding the fetus
- Premature rupture of the membranes
- Premature labor and delivery
- Post-delivery infection of the uterus
- Postpartum complications for the baby

A test of cure is necessary to ensure the infection has been eliminated. In 2010, the Expedited Partner Therapy law went into effect.[15] This law makes it possible for medical providers to provide treatment for STIs for the sexual partners of their patients without medical evaluation.



LATE OR NO PRENATAL CARE

Access to and availability of adequate and quality prenatal care is important for pregnant woman. Unfortunately, the quality of prenatal care is often poorly documented. Quality care also includes the respect shown by healthcare providers. Too often, unfortunately, the only information we have is when care started and how many prenatal visits a woman received.

Nearly 13% (n=41) of mothers who experienced an infant death did not start their prenatal care until the third trimester and/or received no prenatal care. This is almost three times more than the mothers of live born infants (4.9%) for this same three year period. According to 2009-2011 State of Wisconsin PRAMS data,[16] the five most common reasons that women cite for not receiving prenatal care as early as wanted or at all are:

38% - I didn't know I was pregnant.

36% - I couldn't get an appointment when I wanted one.

26% - the doctor or my health plan wouldn't start my care as early as I wanted to.

23% - I didn't have my Medicaid, BadgerCare or BadgerCare Plus card.

22% - I didn't have enough money or insurance to pay for my visits.

CLOSE INTERVAL PREGNANCIES

Short intervals between delivery and the next pregnancy are linked to prematurity, intentional and unintentional injuries, and Sudden Unexpected Infant Deaths. A close interval pregnancy is defined as less than 18 months between delivery and the date of the last menstrual period which signals the beginning of the next pregnancy. In more than 35.5% of infant deaths, the mother had a delivery less than 12 months prior. In another 7.8% of infant deaths, the mother had a delivery less than 18 months prior. Data from the Wisconsin PRAMS survey showed that 38% of Wisconsin mothers surveyed had an unintended pregnancy.[17] In 2011, FIMR began tracking postpartum healthcare provider visits and birth control documentation. Birth control was not mentioned or documented in the hospital chart or postpartum provider notes in 88.2% of mothers who had a close interval birth. Only 29.4% of the mothers who had an infant death even had a documented postpartum visit.

Infant Death: Close Interval Pregnancies

Postpartum visits18 are needed to:

- Discuss any complications that occurred during the pregnancy.
- Plan for follow-up of any medical and mental health conditions.
- Discuss sexual activity and plans for contraception.

When an infant death has occurred, it is also necessary to:

- Discuss the baby's death and the cause of death.
- Try to answer the question "Will it happen again?"

As shown by the quote below, providers seem to give inconsistent messages on birth control:

1) A doctor said in the medical record: "This mother is unsure if she wants to get pregnant again, or for many years. She needs to allow two to three months to allow periods to return to normal before attempting pregnancy."

Mothers may hear or interpret provider messages differently:

1) One mother told an interviewer that she had a new boyfriend so she declined birth control. She was pregnant again in four months.
2) One mother stated to an interviewer, "I don't believe in birth control."

After an Infant Death...

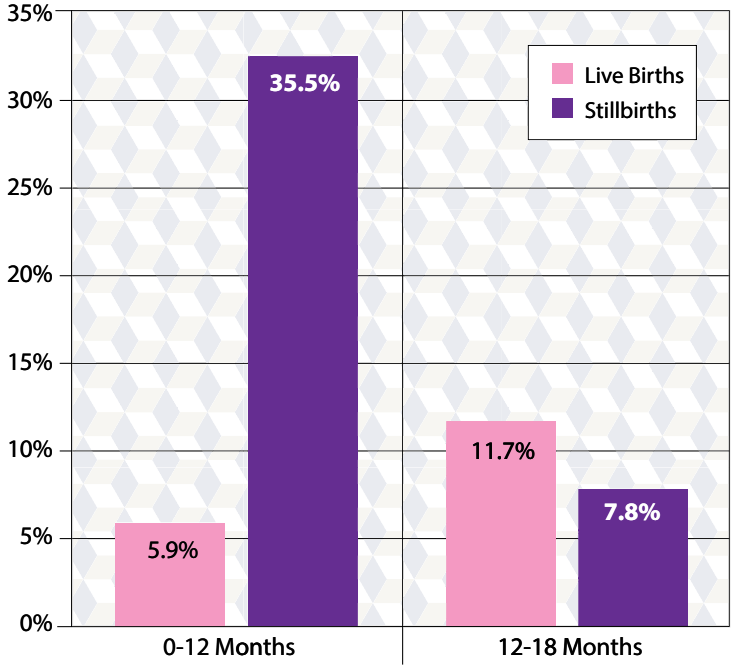
It is important to:

let a woman's body heal,

ensure that chronic conditions and infections are addressed before another pregnancy, and

deal with the emotional issues that follow a loss.

Close Intervals Between Pregnancies in Mothers with an Infant Death
2009-2011 City of Milwaukee FIMR analysis
N=231



Interval between date of last delivery and date of last menses

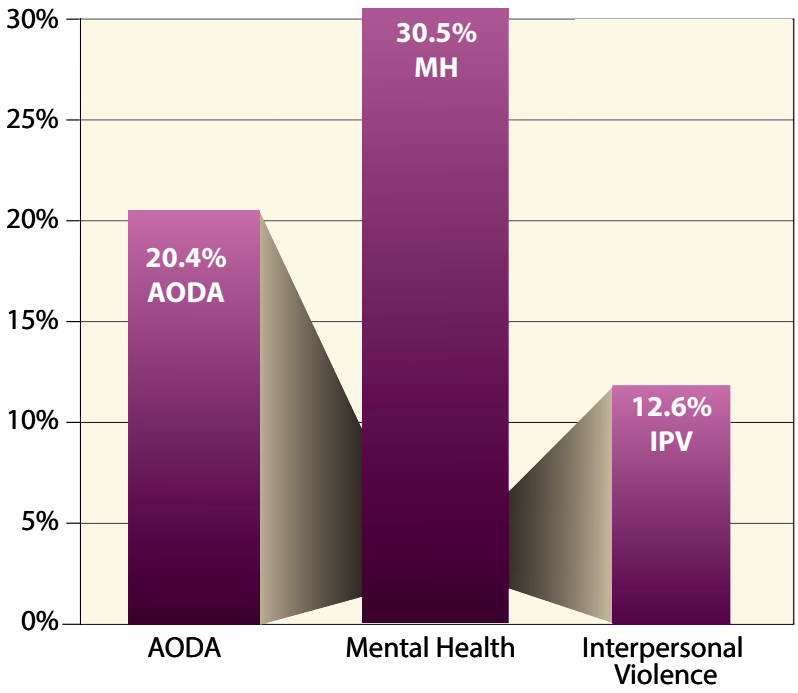
Data on birth control discussions from FIMR abstractions

After an infant death, it is important to let a woman's body heal, ensure that chronic conditions and infections are addressed before another pregnancy and deal with the emotional issues that follow a loss. Intraconceptional birth control measures are important to this healing.

Delivering Milwaukee Hospitals	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Hospital F
% Birth Control discussed and documented	0.0%	36.0%	11.1%	20.0%	33.3%	6.7%

ALCOHOL AND OTHER DRUGS OF ABUSE (AODA), MENTAL HEALTH, INTERPERSONAL VIOLENCE CONCERNS

AODA, Mental Health Status and Interpersonal Violence (IPV) During Pregnancy Mothers with an Infant Death
2009-2011 FIMR data analysis



Alcohol and Other Drugs of Abuse (AODA)

Alcohol and drug use increases the risk of miscarriage, stillbirth, preterm birth and low birthweight, and can negatively impact fetal and infant development. Maternal alcohol or drug use is seen in nearly 20% of mothers who had an infant death.

Mental Health

More than 30% (30.8%) of mothers who had experienced an infant death reported a mental health issue. The perinatal mental health literature states that mental health issues are typically seen in 10-15% of pregnant women.[19] This corresponds to 2009-2011 Wisconsin PRAMS data stating that 12.7% of Wisconsin mothers reported a mental health issue during pregnancy.[16]

The National Coalition Against Domestic Violence states that "most cases of domestic violence are never reported."

Interpersonal Violence

Interpersonal violence includes both physical and emotional violence. It does not mean only partner violence, but also includes parent to child violence, sibling violence or acquaintance violence. Interpersonal violence was reported in 12.6% of mothers who experienced an infant death. A 2011 Institute of Medicine recommendation asks that providers "screen and counsel for interpersonal and domestic violence. Screening and counseling involves elicitation of information from women and adolescents about current and past violence and abuse in a culturally sensitive and supportive manner to address current health concerns about safety and other current or future health problems."[12] The National Coalition Against Domestic Violence states that "most cases of domestic violence are never reported."[20] Starting in 2011, FIMR began tracking if mothers were asked about their safety either at the delivering hospital or prenatally by their providers.

More than 58% of these mothers were never asked.

PROVIDER/HOSPITAL FOLLOW-UP FOR COMPLICATIONS OF PREMATURITY

Placental examination and follow-up laboratory testing are non-invasive methods which can often contribute to a determination of cause of death, especially when an autopsy will not be performed. Of the multiple causes of death, only the cases with a cause 'complications of prematurity' were analyzed. A true cause is not known for many of these deaths.

- Only 17.5% of these infant deaths received an autopsy.
- The maternal placenta was analyzed in only 17.5% of these deaths.
- In 18% there was no documented laboratory follow-up of any kind. Common laboratory follow-ups include testing for:
  - Coagulation issues,
  - Lupus titers,
  - Viral studies,
  - Thyroid disease testing,
  - Diabetes, or
  - Genetic Anomalies

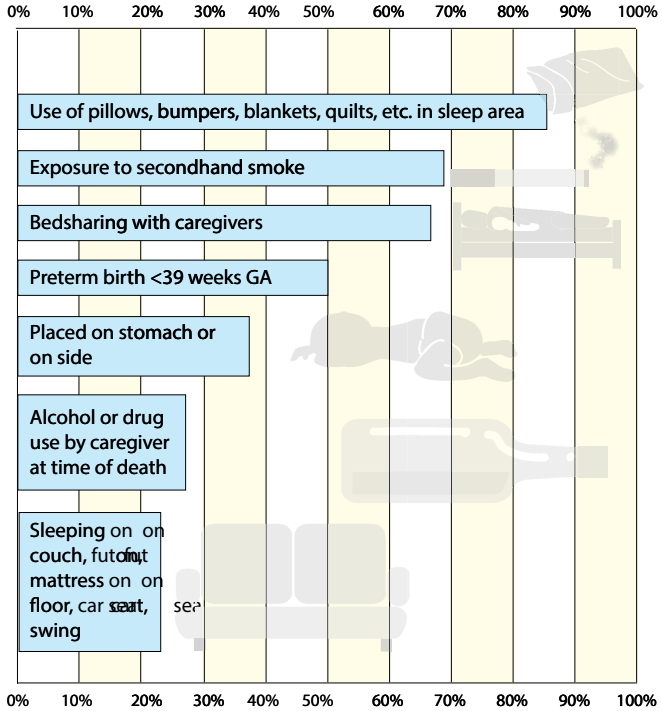
Provider/Hospital Follow-up	Hospital A N=34	Hospital B N=35	Hospital C N=71	Hospital D N=7	Hospital E N=6	Hospital F N=25
% Placental Analysis done	47.1%	80.0%	88.7%	42.9%	100.0%	56.0%
% Autopsy done	8.8%	8.6%	26.8%	14.3%	16.7%	16.0%
% Follow-up Laboratory Studies done	8.8%	17.1%	28.2%	0.0%	16.7%	12.0%

SLEEP ENVIRONMENT

Sudden Infant Death Syndrome, Sudden Unexpected Death in Infancy (SUDI) and **Accidental Suffocation** accounted for 15.1% of all 2009-2011 infant deaths.

Sleep environment is a complex issue when infants die at home while asleep. All information on safe sleep is abstracted from the death scene investigative report. The American Academy of Pediatrics (AAP)[28] and the City of Milwaukee Health Department[29] ask that all parents and caregivers share a room, not a bed with their babies. The Wisconsin PRAMS survey[16] asked 'How often does your new baby sleep in the same bed with you or anyone else?' 28% of mothers said that that their new baby had slept in the same bed with her or anyone else 'always,' 'often' or 'sometimes'; 72% said 'rarely' or 'never.'

2009–2011 Safe Sleep Risk Factors N=48



Infant Death: Sleep Environment

SAFE SLEEP GUIDELINES

The City of Milwaukee Health Department recommends that families follow the ABCs of Safe Sleep, stating that a safe sleep environment is one in which an infant sleeps:

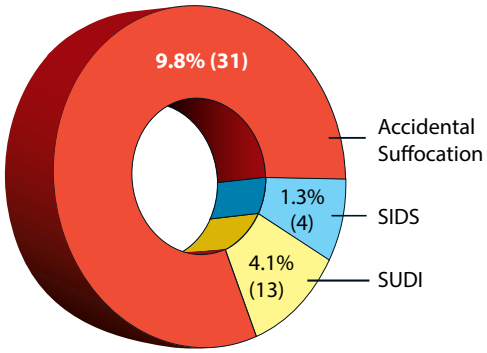
A = **Alone**

B = On his or her **Back**

C = In a **crib**, bassinette or Pack N' Play without pillows, blankets, bumper pads, sheets or toys in it

S = In a **smoke-free** environment, including free of marijuana smoke

Subcategories of Sleep-Related Deaths (15.1%)



An infant should never be cared for by someone under the influence of alcohol or drugs, including some prescription drugs.

Mothers responding to the Wisconsin PRAMS survey[16] share these messages

- Please do not sleep with the babies in your arms or in the bed with you.
- Always place your baby on their back.
- Cribs are very expensive and that is why many mothers co-sleep - portable cribs should be available to low-income mothers.
- Do not co-sleep with your children. It leads to death.
- I appreciate the survey and hopefully the rate that mothers lose their children, and sleep with their children, will go down.

SOCIAL DETERMINANTS, SOCIAL INEQUALITY AND INFANT MORTALITY

Improving birth outcomes and eliminating the persistent racial disparities in infant mortality in Milwaukee will require concerted efforts at all levels state and local government. Infant mortality is considered a 'barometer' of a community's overall health and wellbeing because many of the underlying causes and contributing factors to infant mortality are also drivers of many other health problems ranging from asthma and mental health to heart disease and cancer. Further, while the strategies to reduce infant deaths are complex and multilayered, many of those strategies would also be effective at improving other types of health outcomes.

- The Social Determinants of Health framework is suitable for such an issue because it focuses on the underlying fundamental causes rather than dealing with secondary causes. According to this framework, where we are born, grow, live, work and age contributes significantly to our overall health and wellbeing.
- According to the World Health Commission on Social Determinants, upstream social factors (*e.g.,* income, accumulated wealth, educational attainment, and experiences based on racial or ethnic identification) are linked to important health outcomes.

These factors affect health in both direct and indirect ways.

- Directly, the chronic stress of living with low educational attainment, poverty, violence or discrimination causes the elevation of stress hormones in the body, including cortisol and adrenaline. In adults, these cause changes in glucose metabolism (increasing risk for obesity and diabetes), blood pressure (increasing risk for heart disease and stroke), and immune system functioning (increasing risk for cancer and other chronic diseases). In pregnant women, these same hormones affect placental blood flow, maternal glucose metabolism, blood pressure and uterine irritability, all of which can lead to abnormal birth weight and premature birth.

- Indirectly, these 'upstream factors' affect health through several mechanisms, including
  - Making it more difficult to access timely and high quality medical care (ranging from being uninsured to difficulty getting time off from work to see a healthcare professional.
  - Making it more difficult to practice health behaviors. For example, it is difficult to eat a healthy diet if healthy foods are unavailable or unaffordable in your neighborhood.
  - Making it more difficult to live in a home free of hazards such as lead dust or asthma triggers.

Therefore, approaches to improve birth outcomes must also aim at improving the overall conditions that promote health broadly, including addressing the high unemployment rates, income, educational attainment, home ownership, age of housing stock, healthy food access, stress, and single parent households.

Poverty and social inequality are inextricably linked. Milwaukee faces significant challenges in several key social determinants of health indicators.

- According to the US Census, Milwaukee is one of America's 10 most impoverished big cities, with an overall poverty rate of 29.4% in 2011.
- The poverty rate among children in 2011 was 43%.
- Poverty and unemployment rates are especially high among racial and ethnic minority groups, with 41% black and 35% of Hispanic residents in the city living in poverty in 2011.
- In 2010, the Milwaukee-Waukesha-West Allis metropolitan area was rated second highest in black unemployment (22.3) in the nation, surpassed only by Detroit metropolitan area (24.7%). The City's black-white unemployment rate ratio of 3.8 in 2010 was the highest among metropolitan areas in the nation and consistent with the ranking of Milwaukee as having the highest degree of black-white segregation among the nation's 100 largest metropolitan areas.[31]
- The 2011 median income in the city was $33,122, compared to $40,702 in Milwaukee county and $50,395 in the state.
- Milwaukee county ranks higher in the proportion of uninsured residents (12.8%), compared to adjacent counties of Waukesha (5.1%) and Ozaukee (4.7%).[32]

RACIAL DISPARITIES

The use of racial data for reporting health parameters and health status is controversial because their relevance are often misunderstood. Other factors—such as poverty, job availability, economic status, and access to services, as well as cultural traditions—may be more pertinent to a better understanding of the differences in health outcomes. Further, in Milwaukee as in the US, poverty, unemployment and economic status are strongly tied to race. As we know, these socioeconomic factors are very strong determinants of health. It is also true that there is a great deal of scientific evidence showing that race is a social idea, not a biological one (e.g. there is no genetic reason for racial disparities in birth outcomes.

However, racial data and the elimination of racial and ethnic disparities may help focus resources on specific geographies and allow for more culturally appropriate intervention strategies. It is clear that the experience of racism or other forms of discrimination make birth outcomes worse even between women who have otherwise similar socioeconomic status.

The race and ethnic categories used in this report are used by the US Census. The infant's race is based solely on the mother's race as reported by the mother on the child's birth certificate.

"Over time in Milwaukee poverty has become more persistent and concentrated. Many of these problems will not go away as long as the unemployment rate in Milwaukee remains high. It usually is double the national average rate and particularly troublesome for people of color. At this point, I don't foresee any improvements to the situation. It would take a concerted effort on the part of businesses and city-wide initiatives. Given that the poverty rate has risen over time rather than declined, it is hard to be optimistic."

Bob Greene-Marquette University.[30]

Racial and Ethnic Disparities

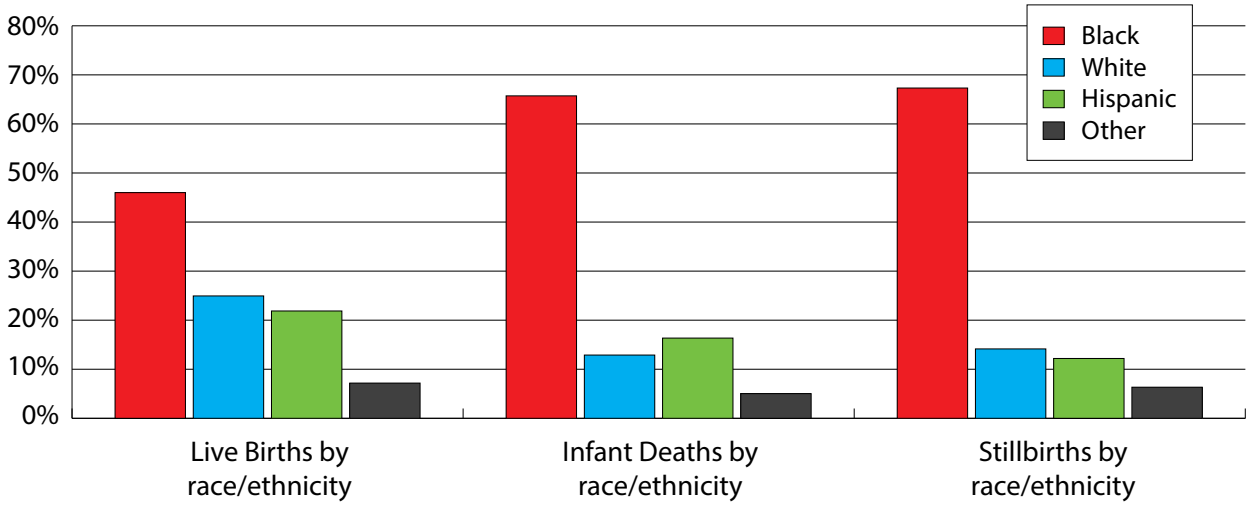
In this report:

Black = Black, non-Hispanic ethnicity;
White = White, non-Hispanic ethnicity; and
Hispanic = includes all race classifications, Hispanic ethnicity
*Other= Other races/ethnicities, including Bi-racial

For 2009-2011, Black infants died nearly three times more often than White infants. This table shows the disparity in this three-year period compared to data from the previous FIMR reports.

*Other Races/Ethnicities are not included. The numbers are too small to be statistically significant.

Racial and Ethnic Disparity in Infant Deaths and Stillbirths in Milwaukee 2009–2011 FIMR Analysis



Disparity by Race and Ethnicity	1995-1999	2000-2004	2005-2008	2009-2011
Black	16.5	18.1	15.7	14.4
White	7.4	5.4	6.4	5.2
Hispanic	8.4	6.9	7.4	7.5
Other Race/Ethnicities	4.4	9.7	9.3	7.1
Disparities				
Black/White	2.2	3.4	2.5	2.8
Hispanic/White	1.1	1.2	1.1	1.4
Other Race/White	0.6	1.8	1.4	1.3

Racial and Ethnic Disparities

Disparities by ZIP Code								
ZIP Code	2009-2011 IMR	2009-2011 Minority (not White) IMR	2011 Estimated Teen Birth Rate	Males 18-24 without HS Diploma	Females 18-24 without HS Diploma	Female Single Parent Households with Children <18	Families Below the Poverty Level	Median Income
53202	10.4	NA	21.4	1.8%	1.6%	1.0%	5.2%	$44,093
52203	NA	NA	NA	0.0%	0.0%	0.0%	0.0%	$41,655
53204	11.0	11.3	88.7	42.6%	32.5%	67.0%	42.8%	$26,297
53205	14.0	14.4	74.4	33.3%	22.2%	53.0%	44.8%	$22,838
53206	12.8	12.6	72.0	34.9%	25.5%	54.9%	47.4%	$23,602
53206	2.7	0.0	32.8	14.4%	18.3%	25.6%	23.9%	$52,964
53208	8.9	9.4	71.3	20.9%	24.5%	59.6%	31.0%	$32,160
53209	10.5	11.6	57.8	28.3%	20.7%	43.8%	37.9%	$33,998
53210	13.7	14.1	94.5	44.1%	20.6%	51.9%	39.5%	$32,800
53211	0.0	0.0	2.3	1.4%	1.6%	20.2%	23.1%	$49,128
53212	15.6	18.5	56.7	30.9%	14.7%	53.7%	41.7%	$29,734
53213	NA	NA	NA	7.1%	8.2%	5.5%	3.2%	$64,102
53214	NA	NA	31.7	17.6%	5.8%	9.2%	11.8%	$43,989
53215	5.9	5.4	61.6	43.3%	31.7%	52.4%	29.9%	$34,942
53216	15.9	16.8	57.0	23.0%	18.5%	49.3%	37.3%	$33,486
53217	NA	NA	NA	11.3%	4.3%	3.3%	2.7%	$95,150
53218	16.7	16.1	43.6	30.8%	19.9%	47.2%	45.2%	$34,239
53219	3.9	8.7	33.8	19.3%	17.6%	6.9%	5.5%	$47,564
53220	6.3	NSS	28.7	16.8%	12.3%	6.1%	6.6%	$45,572
53221	8.3	12.8	98.0	10.2%	13.8%	6.0%	10.8%	$44,941
53222	7.9	9.8	52.3	20.8%	14.3%	8.8%	7.8%	$52,377
53223	16.3	19.4	28.9	29.1%	13.8%	28.6%	25.9%	$44,738
53224	9.0	10.8	43.9	27.4%	9.9%	40.6%	41.0%	$40,691
53225	11.9	12.1	75.2	25.3%	17.6%	38.8%	33.6%	$38,594
53226	NA	NA	NA	13.8%	3.0%	5.0%	2.8%	$79,498
53227	NA	NA	NA	13.3%	21.7%	8.2%	8.5%	$54,239
53228	NA	NA	NA	15.5%	11.8%	4.0%	5.1%	$72,070

ZIP Code data from 2007-2011 5-year American Community Survey at http://www.census.gov/acs/www/

*Infant mortality data source: City of Milwaukee Health Department

*Teen birth numerator data source: City of Milwaukee Health Department

NA=not sufficient live births for analysis

RECOMMENDATIONS FOR ACTION AFTER REVIEW AND ANALYSIS OF 2009-2011 INFANT DEATHS AND STILLBIRTHS

Who is responsible? Who should take action?

These recommendations present many layers of responsibility. The following pages detail each recommendation and indicates some of the partnerships that need to be established for these recommendations to be put into action.

Policy Makers

How should federal, state and local governments, and corporate entities help public health, providers and agencies to reduce disparity and increase infant survival?

Health Plans
Clinics/Provider Groups
Private Practices
Community Agencies

How can healthcare providers and social service providers apply Standards of Care and the concepts of Social Justice to reduce disparity and increase infant survival?

The Milwaukee Community

How can the community be informed? How can the community act to reduce disparity and increase infant survival?

Individuals

What actions can individuals and families take to reduce disparity and increase infant survival?

Recommendations	Policy Makers	Health Plans	Hospitals, Clinics, Practices	Providers	Community Agencies	The Milwaukee Community	Individuals
1. Improve women's health and quality of care across the lifespan. Provide access to quality preconceptional and interconceptional care for all women, including continuous health and wraparound insurance coverage **to include documented and definitive postpartum counseling regarding interconceptional care, birth control and a reproductive lifeplan.**							
A. Identify, screen, monitor and provide quality care to women with preexisting medical conditions, including:	●	●	●	●			
1. previous preterm birth.	●	●	●	●			
2. maternal hypertension, diabetes, infection.	●	●	●	●			
3. mental health issues, particularly depression and anxiety.	●	●	●	●	●	●	
B. Promote maintenance of a healthy weight, exercise, and nutrition throughout the lifespan.	●	●	●	●	●	●	●
C. Promote culturally competent care.	●	●	●	●	●	●	
D. Promote provider adherence to established and rigorous practice guidelines and a routine discussion of risk factors leading to poor outcomes, including:							
1. STDs, health and pregnancy.		●	●	●	●	●	
2. Tobacco and marijuana use/cessation.	●	●	●	●	●	●	
3. Substance abuse/intervention re: pain killers, methamphetamine, cocaine, antidepressants.		●	●	●	●	●	
4. Chronic condition control especially for diabetes, hypertension and infections.	●	●	●	●	●	●	
5. Domestic violence and other interpersonal violence.	●	●	●	●	●	●	
6. Mental health issues.	●	●	●	●	●	●	
E. Promote active patient participation in the delivery of prenatal services through programs such as Centering Pregnancy, home visitation, the special supplemental nutrition program for Women, Infants and Children (WIC), and Prenatal Care Coordination (PNCC).	●	●	●	●	●	●	●
2. Improve comprehensive reproductive health services for all girls and boys, women and men of reproductive age.							
A. Encourage and promote pregnancy intendedness.	●	●	●	●	●	●	●
B. Promote and educate about the benefits of longer inter-pregnancy intervals of 18 months or more.	●	●	●	●	●	●	●
C. Promote and increase contraception use to ensure the health of the mother, the father, the family and the baby.	●	●	●	●	●	●	●

Recommendations	Policy Makers	Health Plans	Hospitals, Clinics, Practices	Providers	Community Agencies	The Milwaukee Community	Individuals
3. Promote and Support Safe Sleep education							
A. Educate and promote safe sleep practices (*e.g.*, Back to Sleep, no bed-sharing with infants, no exposure to secondhand smoke, etc.) to mothers, fathers and all those who care for infants through hospital policies throughout the institutions.		●	●	●	●	●	●
B. Educate mothers on how to teach others to care for her baby.		●	●	●	●	●	●
C. Educate parents on developmental milestones.		●	●	●	●	●	●
4. Support and promote Men's Health and Fatherhood Issues across the lifespan							
A. Provide access to quality healthcare for all men, including continuous health insurance coverage	●	●	●	●	●	●	
B. Promote provider adherence to established and rigorous practice guidelines and a routine discussion of risk factors for health, including:							
1. STDs, health and pregnancy.	●	●	●	●	●	●	
2. Domestic violence and other interpersonal violence.	●	●	●	●	●	●	
3. Tobacco and marijuana use/cessation.	●	●	●	●	●	●	
4. Mental health issues, including mood, anxiety and trauma.	●	●	●	●	●	●	
C. Promote and encourage fatherhood intendedness.	●	●	●	●	●	●	●
D. Strengthen father involvement in families.	●		●	●	●	●	●
5. Understand and work to eliminate RACISM by improving the SOCIAL, ECONOMIC, EDUCATIONAL, ENVIRONMENTAL determinants of health. Our infant deaths and stillbirths are a public health crises for the City of Milwaukee. Racism, injustice and disenfranchisement cut across all of our recommendations for action. We are divided by these issues. They dull our ability to take action. If we do not attend to the overarching and overwhelming issues of segregation, poverty, intolerance, social isolation and neglect, we will never be able to make any real change. We can challenge ourselves, challenge all policy makers, and all community members to address these issues. Change can be accomplished by:							
A. Addressing issues of social isolation. Increase your own opportunities for social interaction and networking through investments of your own time/talent/money. Talk to the new mother next door, talk to the elderly neighbor and make sure they are safe, talk to your healthcare provider and work together, talk to your local leadership about helping to make your neighborhood safe.	●	●	●	●	●	●	●
B. Addressing the educational and training issues seen in our city. Advocate for your local schools, both private and public. Offer to supervise an after-school activity. Mentor a group of children or adolescents. Teach an after-school class. Offer internships where you work to both adults and teens.	●				●	●	●
C. Becoming involved in urban planning policies and work to develop your community. You could talk to your alderperson to develop a park in your neighborhood, talk to the police about the safety issues on your block, talk to city transportation officials if a street needs a stoplight to make it safe, talk to public works if you need help cleaning up an alley.	●	●	●	●	●	●	●

Community Activities Focused on FIMR Recommendations

FETAL INFANT MORTALITY REVIEW

The City of Milwaukee's Fetal Infant Mortality Review (FIMR) process has been the driving force for a much-needed focus on healthy birth outcomes within Milwaukee. FIMR recommends prevention guidelines through a unique evidence-based, quality improvement process which has played a significant role in building community partnerships, understanding community issues associated with health disparities, and developing culturally sensitive actions to address disparity. Examples of its accomplishments:

- Providing local hospitals and HMOs de-identified infant death and stillbirth data on their own patients
- Increasing the focus on community fetal and infant death prevention through community presentations and through participation in the statewide advisory workgroups on health disparities and data and evidence-based practices
- Providing data to spur community action

Our partner organizations have done much to improve birth outcomes in Milwaukee. The following are some of their accomplishments.

CITY OF MILWAUKEE HEALTH DEPARTMENT

(www.milwaukee.gov/health or 414-286-3521)

The City of Milwaukee Health Department (MHD) is the largest local public health department in Wisconsin and has been providing public health nursing home-visitation services to the Milwaukee community for more than 120 years. Infant mortality reduction is the highest priority of the MHD. MHD's family and child health programs include:

- Clinic services: Immunizations, health checks, and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC)
- Infant mortality education: To increase awareness of infant mortality in Milwaukee and identify how individuals and organizations can assist in reducing the risk for the populations they serve, the MHD offers infant mortality education to members of the public, professionals in the nursing and medical community at hospitals, and local clinics
- Cribs for Kids Program: Provides Pack N' Play® portable cribs alongside education on safe sleep and other Sudden Infant Death Syndrome (SIDS) reduction strategies
- Nurse home visitation: Three home-visitation programs, Empowering Families of Milwaukee (EFM), Nurse Family Partnership (NFP) and Parents Nurturing and Caring for their Children (PNCC), provide home-based services to at-risk pregnant women and their infants to support families around child care and development, child health and safety, positive parenting skills, parental health and well-being
- Plain Talk: A teen pregnancy prevention initiative designed to assist parents and other influential adults in developing the skills and tools they need to communicate effectively with youth and children about abstinence, healthy relationships, and sexuality
- Men's Health Program: Provides assistance and referrals for a broad range of preventive health and social service issues to individuals and groups, including health check-ups and prevention education as well as assistance with enrollment in health benefits, fatherhood, and parent service programs

CENTER FOR URBAN POPULATION HEALTH

(www.cuph.org or 414-219-5100)

The Center for Urban Population Health works to improve the health of urban communities across the lifecourse and is a collaboration of the University of Wisconsin School of Medicine and Public Health, the University of Wisconsin-Milwaukee, and Aurora Health Care, Inc. Since 2008, one of the focus areas of the Center has been on infant and maternal health. The Center facilitates community work in these areas in several different ways:

- Maintains a "catalog" of community and research initiatives and workgroups focused on improving infant health outcomes, including infant mortality
- Facilitates and supports faculty researchers focused on improving infant and maternal health outcomes, including collaborating on more than 30 research projects and programs aimed at examining and addressing factors contributing to infant mortality Recently developed a resource website: Community Research Information for Healthy Births (www.crihb.uwm.edu) that serves as a "one-stop shop" for local data on the social determinants of health that affect birth outcomes
- Provides data on health disparities by socioeconomic status on infant and maternal health-related outcomes in its annual Milwaukee Health Report

Community Activities Focused on FIMR Recommendations

MILWAUKEE COUNTY MEDICAL EXAMINER

(http://county.milwaukee.gov/MedicalExaminer or 414-223-1200)

The Milwaukee County Medical Examiner's Office is charged with investigating and determining the cause, circumstances and manner in each case of sudden or unexpected infant death. The Medical Examiner also participates in prevention of infant deaths in the following manner:

- Thoroughly investigating infant deaths by conducting a scene investigation and by the use of doll re-enactment, gathering medical history, and completing an autopsy
- Gathering and sharing statistical information on infant deaths
- Participating in FIMR and infant death review committees both at the local and state level
- Promoting and maintaining the highest professional standards in the field of death investigation
- Enhancing public health and safety through education in the reduction of preventable deaths
- Protecting the interests of deceased individuals, their loved ones, and the communities we serve

AURORA SINAI MIDWIFERY AND WELLNESS CENTER

(http://www.aurorahealthcare.org/services/womens-health-care/obstetric-services/midwife-services or 414-219-6649)

The Aurora Sinai Midwifery & Wellness Center provides high-quality, personalized care, before, during and after childbirth. All of the midwives are registered nurses with nurse midwife certification who have completed a master's degree or higher.

- Certified Nurse Midwives are members of a research team planning a RCT (randomized controlled trial) of oral probiotic supplementation to reduce GBS colonization at 36 weeks gestation. Preliminary work conducted by the same team suggested efficacy and supported the need for a RCT.
- Certified Nurse Midwives participate in FIMR.
- Providers routinely provide Expedited Partner Treatment (EPT) for sexually transmitted infections, when appropriate.
- Encourage and assist in smoking cessation through First Breath.
- Offer group prenatal care using the Centering Pregnancy model.
- Participate in the High Risk OB Medical Home pilot project to improve birth outcomes.
- Promote safe sleep practices, including a safe crib on display at the Birth Center greeter's desk and a sleepsack swaddle provided to all newborns on the postpartum unit.
- Promote breastfeeding through the initiation of an education program, EMMI, which includes a bulletin board with breastfeeding information, a breastfeeding video that is viewed at the 28 week visit, and a breastfeeding information booklet that is provided at that same visit. In addition, lactation services are offered by IBCLC certified CNMs in the office.
- Encourage adherence to the 6 week postpartum follow-up visit by scheduling the appointment prior to hospital discharge and offering a mom/baby or family photo at the postpartum visit. In addition, every patient who returns for the visit is entered in a monthly drawing for a handmade quilt.
- Adherence to guidelines promoting the use of Progesterone supplementation for women at risk for preterm birth.
- Followup calls by an RN for missed visits, promoting adherence to prenatal care standards.
- Referral to Aurora Family Services for those patients who could benefit from home visits by an RN.

MILWAUKEE HEALTH SERVICES

(www.mhsi.org or 414-372-8080)

The mission of Milwaukee Health Services, Inc. is to provide accessible quality primary and related health care services to Milwaukee residents, with our continuing emphasis on medically-underserved families and individuals. In addition, MHSI is committed to removing barriers and improving health outcomes to promote quality of life and reduce disparities among racial and ethnic communities.

Our initiatives to combat infant mortality include:

- OB Medical Home Pilot.
- Nurse case managers who provide PNCC services.
- Centering Pregnancy Program.

- Well Baby Groups.
- Perinatal adolescent mentors for pregnant and parenting teens.
- Car Seat Clinic: education and distribution of free child safety seats.
- Pack N' Play distribution and safe sleep education.
- Perinatal Smoking Cessation Group.
- First Breath and My Baby and Me Site.
- WIC services.
- Breastfeeding classes and breastfeeding peer counselors.
- Onsite services to apply for BadgerCare and Family Planning Only Services.
- Dental and Behavioral health services.
- Clinical pharmacists who provide 1:1 and group education regarding medication during pregnancy and breastfeeding.
- Services and social support offered to dads and dads-to-be. Partners are invited to participate in all group programming.
- Young Parenthood Project: A Father Engagement Strategy for Healthy Families

UNITED HEALTHCARE COMMUNITY PLAN (www.uhccommunityplan.com or 1-800-905-8671)

United Healthcare strives to ensure that the people we serve not only receive access to quality health care, but also have the information, guidance and tools they need to make informed decisions about their health and well-being. Beyond the data and technology, however, and beyond the numbers and networks, its businesses are made up of individuals who strive, every day, to help people lead healthier lives. Its healthy birth outcome initiatives include:

- Enrolling members with high risk pregnancies into our Healthy First Steps™ (HFS) program.
- Working with diabetic pregnant members to ensure appropriate lab tests are completed.
- Encouraging smoking cessation through collaboration with the Wisconsin Tobacco Quit Line.
- Ensuring postpartum depression screening.
- Educating members on safe sleep. Safe sleep is supported through coordination with the City of Milwaukee Health Department Cribs for Kids program.
- Offering our Diaper Rewards program to promote well-child checks and a six week postpartum exam.
- Promoting Text4baby, a free educational service to pregnant members, Our Healthy First Steps™ program is an Outreach Partner for the program.
- Engaging members in our Community Rewards™ program. This program rewards new members for engaging in healthy habits for children ages 0-13.
- Enrolling identified members in our Care Management program during the interconceptional period.

BUREAU OF MILWAUKEE CHILD WELFARE (www.dcf.wisconsin.gov/bmcw or 414-220-7000)

The Bureau of Milwaukee Child Welfare (BMCW) works with Milwaukee area families to ensure the safety and well-being of children. Child protective services are provided by the Bureau of Milwaukee Child Welfare (BMCW) from a central administrative site located in the City of Milwaukee, two regional locations, and two private partner agencies. The Bureau of Milwaukee Child Welfare has engaged in the following efforts to address infant mortality:

- Initiated educational in-services for child welfare staff in order to promote awareness and understanding of importance of appropriate sleep environments for infants.
- Collaborates with the Cribs for Kids program for standardized Pack 'N Play distribution.
- Utilizes standard safe sleep environment education materials for birth and foster parents caring for infants.
- Collaborates with City of Milwaukee Health Department Home Visitation Program for pregnant teens.

continued

DEPARTMENT OF HEALTH SERVICES, STATE OF WISCONSIN

(www.dhs.wisconsin.gov or 608-261-0653)

The Wisconsin Division of Public Health of the Department of Health Services (DHS), through the Keeping Kids Alive initiative, is sponsoring the expansion and coordination of fetal and infant mortality reviews (FIMR) and child death reviews (CDR).

- Through this initiative and funding from the Wisconsin Partnership Program, the City of Milwaukee Health Department, Madison/Dane County Public Health, and DHS are collaborating with the Children's Health Alliance of Wisconsin to develop a FIMR database and a model statewide FIMR/CDR process.
- DHS also contracts with three BadgerCare Plus HMOs in Milwaukee County and surrounding counties who are piloting the medical home program for high-risk pregnant women, which includes enhanced care coordination for women and provides additional funding to the 18 participating medical home clinics. To date, initial chart reviews of the 1,146 enrolled mothers who have delivered, indicate that clinics are reaching the targeted population.
- Women are being enrolled early in their pregnancies (within the first 18 weeks), and women are keeping prenatal and post-partum appointments.
- Finally, Wisconsin's Maternal and Child Health (MCH) Program and MCH stakeholders are participating in a new initiative, co-sponsored by the federal MCH Bureau and key national partners. Through this Collaborative Improvement and Innovation Network (CoIIN), the states in Region V will develop and implement common solutions to reduce disparities in infant mortality and improve birth outcomes.

PRAMS

PRAMS fact sheets are available at http://www.dhs.wisconsin.gov/births/prams.

Wisconsin PRAMS is a statewide survey prepared in the Division of Public Health, Wisconsin Department of Health Services. Started in 2007, it is designed to monitor the health and experience of women before, during and just after pregnancy. It is conducted by mail with telephone follow-up. The 2009-2011 combined data file includes 3.437 mothers who responded to the surveys. Funding for PRAMS is provided in part by the Centers for Disease Control and Prevention. Additional support is provided by the Title V Maternal and Child Health Block Grant Program and the Wisconsin Partnership Program, University of Wisconsin School of Medicine and Public Health.

COLUMBIA-ST. MARY'S HOSPITAL (www.columbia-stmarys.org or 414-291-1081)

Columbia St. Mary's exists to make a positive difference in the health status and lives of individuals and our community, with special concern for those who are vulnerable. Columbia St. Mary's is a recognized leader in addressing the health care needs of Milwaukee area women. Columbia St. Mary's has worked to improve women's health and infant health through:

- Collaboration with Sixteenth Street Community Health Center in labor and delivery for their OB patients.
- Sponsorship of the CSM OB/GYN Clinic to serve impoverished or otherwise vulnerable communities in women's health needs.
- Development of the CSM Level III Neonatal Intensive Care Unit on an all-private room model to improve infection control while offering a less stressful setting for family privacy and bonding.
- Expansion of the Blanket of Love, CSM's community-based prenatal and parenting education program.
- Sponsorship of the Safe Sleep Sabbath to communicate principles of Safe Sleep across the community through the leadership of area clergy.
- Sponsorship of a SleepSack Swaddle distribution for Safe Sleep Education.
- Expansion of Pack 'N Play™ distribution to families in need.

continued

Community Activities Focused on FIMR Recommendations

CHILDREN'S HEALTH ALLIANCE OF WISCONSIN (www.chawisconsin.org or 414-292-4000)

Children's Health Alliance of Wisconsin, affiliated with Children's Hospital of Wisconsin, is a statewide organization working to ensure children are healthy, safe and able to thrive. We are Wisconsin's voice for children's health. We raise awareness, mobilize leaders, impact public health and implement programs proven to work. Our key initiatives are asthma, early literacy, grief and bereavement, injury prevention and death review, lead poisoning and oral health.

At the direction of the Wisconsin Department of Health Services, the Alliance has led efforts to create a comprehensive statewide child death review (CDR) system. The Alliance also is partnering with the City of Milwaukee Health Department, the Zilber School of Public Health at University of Wisconsin-Milwaukee and the Injury Research Center at the Medical College of Wisconsin to build collaboration between CDR and fetal infant mortality review.

The Alliance also leads the Infant Death Center (IDC) which connects with all families who experience a sudden and unexpected death of an infant to better understand their unique grieving needs and provide them with appropriate resources. Staff work closely with professionals serving grieving families to provide additional resources, as well as self-care information for the professional. The IDC also collaborates with Marshfield Clinic to encourage use of the Wisconsin Stillbirth Service Program (WiSSP), and reach stillbirth families in need of grief and bereavement resources.

WISCONSIN ASSOCIATION FOR PERINATAL CARE (WAPC)

(www.perinatalweb.org or 608-285-5858)

The Wisconsin Association for Perinatal Care is the premier multidisciplinary association providing leadership and education for improved perinatal health outcomes of women, infants and their families. The following initiatives are examples of how WAPC works to improve perinatal outcomes.

- Coming to Term initiative – Prematurity is a major contributor to infant mortality and morbidity. Even babies born a few weeks early can suffer long-term problems. In 2012, WAPC launched the Coming to Term initiative to reduce elective deliveries prior to 39 weeks gestation.
- Caring for Late Preterm Infants – Late preterm infants require special care. WAPC developed an order set and care plan, to facilitate evidence-based practices for caring for hospitalized infants born between 34 0/7 weeks and 36 6/7 weeks.
- Women and infants Affected by Opioids – Opioid dependence during pregnancy is a growing public health problem. Women affected by opioids require additional care during pregnancy to assure a healthy outcome, and affected infants need special care as they wean from the drug they were exposed to in utero.
- Healthy Weight in the Perinatal Period – Obesity prior to and during pregnancy contributes to poor birth outcomes, exposing both mother and infant to unnecessary complications. WAPC provides education for providers about how to talk with women about weight management, a topic that is often ignored.
- Safe Sleep – Infant deaths that occur from unsafe sleep environments are both tragic and preventable. WAPC works to educate providers on how to assure that safe sleep is practiced consistently at home and in the hospital.
- WAPC Recommendations for Laboratory Testing During Pregnancy – Standardized laboratory tests assure prompt screening, diagnosis, and treatment for conditions that put women and their infants at risk for poor birth outcomes.
- Screening for Perinatal Depression – Perinatal depression is associated with adverse birth outcomes, including prematurity and low birth weight. WAPC actively supports screening, diagnosis, and treatment for depression in the preconception, prenatal, and postpartum periods to improve both maternal and infant outcomes.

CHILDREN'S COMMUNITY HEALTH PLAN

(www.childrenschp.com or 1-800-482-8010)

Children's Community Health Plan is an HMO for BadgerCare-Plus-eligible families living in 13 counties in eastern Wisconsin. The health plan, which is affiliated with Children's Hospital of Wisconsin, offers a program called Healthy Mom, Healthy Baby. This program uses many tactics to reduce the risk of infant mortality among the families it serves, focusing on the following areas:

- Medical and dental care. Program participants are given information about the importance of good dental hygiene, immunizations, well-baby checkups and newborn care. When appropriate, families are referred to community resources for mental or physical health concerns.
- Safe infant sleep practices. Pregnant women and new mothers are taught about safe infant sleep practices and they can earn Pack 'n Plays® and fitted sheets through an incentive program. The Healthy Mom, Healthy Baby program also provides Onesies® printed with a message that reinforces safe sleep practices.

- Smoking cessation. Pregnant women and new mothers are given information about the dangers of firsthand, secondhand and thirdhand smoking. Program participants are encouraged to participate in the First Breath program to help them quit or cut back on their smoking.
- Drug use. Program participants are given information about the dangers of drug and alcohol use and encouraged to participate in the My Baby and Me program to help them avoid alcohol use during pregnancy. They also are offered access to drug treatment programs.
- Breastfeeding. Program participants are given information about the benefits of providing breast milk to their baby and given breastfeeding support kits.
- Shaken baby syndrome. Program participants watch a video about caring for a crying baby and discuss infant crying and positive discipline. Participants also discuss how to choose appropriate child care.
- General safety. Program participants receive information about car seat safety and how to avoid environmental hazards.

THE BLACK HEALTH COALITION OF WISCONSIN, INC.

(www.bhcw.org or 414-933-0064)

The Black Health Coalition of Wisconsin (BHCW) has been in existence since 1988. The mission of BHCW is to improve the health status of African Americans and all underserved populations in the State of Wisconsin. The BHCW has always utilized the World Health Organization's philosophy of health which understands that good health is a community necessity and not just for the individual. Therefore, in addition to disparities in medical services and public health, the BHCW focuses on issues of housing, jobs, advocacy, community empowerment and increasing community voice. in 1998, the BHCW received a grant from the federal Maternal and Child Health Bureau to address disparities in African American birth outcomes. BHCW created the Milwaukee Healthy Beginnings Project (MHBP). The accomplishments and outcomes of MHBP have been the following:

- Provided a grant to the City of Milwaukee Health Department to fund its FIMR Program from 1998-2008;
- Provides services to pregnant and postpartum women in the Milwaukee County Jail since 2000;
- Since 1998, has provided services to over 300 pregnant women and their families annually;
- Works in partnership with Children's Hospital Sickle Cell Program to provide targeted case management to families with infants born with Sickle Cell;
- Works in partnership with St. Joseph's Hospital to provide targeted case management to families with child discharged from its Neonatal Intensive Care Unit.
- Works in partnership with the City of Milwaukee Health Department to ensure that every MHBP family receives a Pack 'N Play®;
- Developed targeted case management services, including home visiting, which has documented statistically significant outcomes in the areas of preterm and very low birth weight African American infants compared to the MHBP seven zip code Project Area;
- Has recently developed with members of the African American community, the Milwaukee African American Infant Mortality Task Force. The mission of the Task Force is to assure the voice of a community which is often marginalized and not allowed to speak for itself.

WHEATON FRANCISCAN - ST. JOSEPH WOMEN'S OUTPATIENT CENTER

(http://(www.mywheaton.org/st-joseph-hospital/womens-outpatient-center or 414-447-2275)

The Women's Outpatient Center at Wheaton Franciscan – St. Joseph Campus offers care for low-income women and their babies throughout pregnancy, delivery, and early parenting months. Through community involvement and research, this innovative and multidisciplinary approach has improved preterm birth rates among African American women in the center and increased breastfeeding and early engagement in care. Mothers and families not only get excellent medical care but also receive education on safe sleep, car seat safety, and understanding infant crying and breastfeeding. Prenatal Case Coordination, Social Work and CenteringPregnancy™ services are also available. Women who participate in education are given a Pack 'N Play® for their newborn and a car seat and are eligible for other items in the Stork's Nest. In cooperation with the March of Dimes®, the Stork's Nest program at Wheaton Franciscan- St. Joseph Campus provides incentives, education, and encouragement for low-income, high-risk women to keep prenatal care appointments, a critical factor for helping babies get a healthy start in life. The center is also participating in the Wisconsin High Risk Obstetric Medical Home Pilot.

- Baby Safe Sleep at St. Joseph and St. Francis
  This program provides new mothers with t-shirts and sleepers for their newborns that say "This Side Up," information on safe sleep and the dangers of Sudden Infant Death Syndrome (SIDS), a "New Beginnings" booklet, and Pack 'N Play® portable cribs. The donations to hundreds of low-income families reinforce safe sleep practices and promote safe sleeping conditions at home.
- Safe Place for Newborns™ Program
  Wheaton Franciscan – St. Joseph Campus provides the state headquarters for this program, which supports the Safe Haven Law. Under the state law, any parent is allowed to relinquish a newborn infant up to 72 hours old to any firefighter, police officer, EMT, or hospital staff member. Since the law was enacted in 2001, 26 babies have been relinquished at St. Joseph.

FROEDTERT AND THE MEDICAL COLLEGE OF WISCONSIN

(www.froedterthealth.org or 414-805-3666)

Pathway to Parenthood is an innovative, comprehensive, and convenient prenatal education program for pregnant women and their families who receive care at Froedtert Hospital. The goal is to positively impact the health of pregnant women and their unborn babies, improving birth outcomes and fetal infant mortality rates throughout our community. Only 10% of our patients take the Childbirth Series Classes. After an extensive literature search, we have implemented a unique program linking patient education classes with prenatal visits. Any patient who is delivering at Froedtert Hospital may participate in classes offered Monday through Friday. The classes will be taught by registered nurses in the prenatal education room located in the OB/GYN clinic. With support from the Froedtert Hospital Foundation, all classes are being offered at no charge. Evening childbirth classes will also continue being offered. Pathway to Parenthood is comprised of 7 classes including:

- Pregnancy Basics
- Caring for Baby
- Preparing for Parenthood
- Breastfeeding 101
- Going the Full 40
- Prep for Labor and Delivery
- Keeping Baby Safe

UNITED WAY OF GREATER MILWAUKEE

(www.unitedwaymilwaukee.org or 414-263-8100)

United Way of Greater Milwaukee's (UWGM) mission is to change lives and improve our community by mobilizing people and resources to drive strategic impact in Education, Income and Health. Since 1909, it has been helping people build and sustain better lives. United Way's core strategies – Education, Income and Health – are the building blocks to a good life. Our Healthy Birth Outcomes Initiative is one way we will achieve optimal health outcomes within our community.

Goals:

- Young people delay parenthood until adulthood, and when financially, socially and physically ready.
- Adults in our community actively choose and plan to become parents.
- All parents-to-be receive excellent pre-conception, inter-conception, and post-natal care.
- Our community's babies are born ready to thrive.

Core strategies:

- Teen Pregnancy Prevention
- Infant Mortality Reduction

Grants and Partnerships, 2011 – 2013

- Aurora Sinai and Aurora Family Services, Inter-conception Care Home Visiting Pilot Project
- Blanket of Love, Young Mothers Project
- City of Milwaukee Health Department, Prematurity Intervention Program and Cribs for Kids
- Center for Urban Population Health, CRIHB Website
- Milwaukee Health Services, Caring Hands
- Outreach Community Health Centers, Prenatal Care Outreach and Coordination Program
- Progressive Community Health Centers, OB Medical Home Program
- ixteenth Street Community Health Centers, Infant Safety Project
- Wheaton Franciscan - St. Joseph Foundation, Women's Outpatient Center

COMMUNITYCONNECT HEALTHPLAN

(www.communityconnecthealthplan.com or 1-877-337-5640)

CommunityConnect HealthPlan aims to connect all members with the appropriate comprehensive care and community resources to help improve the health and well-being of the families we serve. We aim to improve the health of our mothers-to-be and our newborns by focusing on the following:

- Providing high-risk pregnant members with enhanced access to comprehensive care that addresses their entire health and social support needs
- Addressing the psycho-social and social support needs of our high-risk pregnant members through interdisciplinary care management and linkages to community-based resources
- Enhancing the involvement of members in their care
- Ensuring continuity and coordination of care among all providers involved in a member's care
- Optimizing care, improving health outcomes and reducing unnecessary health care costs

CommunityConnect HealthPlan's maternal health initiatives include:

- Notification of Pregnancy Provider Incentive aimed at improving identification of high-risk pregnancies
- Enrollment in our Healthy Moms, Healthy Babies Maternal Outreach & Care Coordination program
- Enrollment in our Future Moms Nurse Case Management Program
- Encouraging smoking cessation through collaboration with the Wisconsin Tobacco Quit Line and enrollment in the First Breath Smoking Cessation program
- Educating our members on nutrition, substance abuse, STIs, dental care during pregnancy, benefits of 17P, risks associated with elective induction, breastfeeding, ER utilization, safe sleep, and immunizations
- Member rewards for attending prenatal and postpartum visits

SIXTEENTH STREET COMMUNITY HEALTH CENTER MILWAUKEE CLINIC

www.sschc.org (414) 672-1353

Since 1969, the Sixteenth Street Community Health Center has provided quality health care, health education and social services to residents of the multi-cultural neighborhood on Milwaukee's near South Side. In 2012, Sixteenth Street served more than 30,000 people with nearly 156,000 individual visits made to the Center.

Services and programs offered at Sixteenth Street:

- Primary Medical Care, with 50 bilingual providers in family practice, pediatrics, internal medicine, women's health, (Certified Nurse Midwives), advanced practice nurse practitioners and physicians assistants.
- Behavioral Health, providing the full range of out-patient mental health services for all ages, including individual and family therapy, group therapy and medication management, with a staff of psychiatrists, psychologists, psychotherapists and two doctoral student interns.
- WIC (Women, Infants and Children Program), nutrition education and supplemental food vouchers for pregnant women, infants and children up to age five.
- Health Education, classes on child development, family planning, prenatal care and parenting skills.
- Community Health Navigators – AmeriCorps national service project members work throughout the clinic in pre-natal care, diabetes management, lead poisoning, nutrition counseling and social services.
- Social Services, patient advocacy, crisis intervention, counseling, insurance eligibility and enrollment and information and referral to other agencies.

continued

Community Activities Focused on FIMR Recommendations

MARCH OF DIMES

(www.marchofdimes.com and www.marchofdimes.com/wisconsin) or 414-203-3125

March of Dimes works to ensure that all babies are born healthy. Our mission is to reduce birth defects, prematurity and infant mortality through research, community programs, clinical education, and advocacy through the following:

- MOD Currently funds $1.1M in active research grants in Wisconsin to reduce birth defects, prematurity, and infant mortality
- Chapter provides leadership on HRSA Region V COIN – Collaborative Improvement and Innovation Network to Reduce Infant Mortality
- Statewide Program Services Committee ensures that strategic mission focus is on reducing disparities in birth outcomes
- Over $125,000 in chapter community grants awarded since 2011 to support implementation of CenteringPregnancy™, evidence-based group prenatal care, in partnership with Wellpoint-Anthem BCBS Foundation of WI at the following locations: Aurora Sinai, Wheaton Franciscan St. Joseph Women's Center, Wheaton Franciscan All Saints, Milwaukee Health Services, Inc., University of Wisconsin School of Medicine and Public Health – Department of Obstetrics and Gynecology
- Stork's Nest® projects in partnership with 6 healthcare providers in Milwaukee and the Zeta Phi Beta Sorority, Inc., providing essential newborn items for moms to support engagement in prenatal education and to encourage attendance at provider visits throughout pregnancy. Up to 1,500 women and over $25,000 worth of essential items are provided as incentives annually.
- Advocate locally, statewide and nationally in favor of policies that support the health of moms and babies, including but not limited to preterm birth risk reduction, access to healthcare services for pregnant women and infants, birth defects surveillance, newborn screening, and immunizations.
- NICU Family Support® provides family-centered care in the neonatal intensive care unit including but not limited to bereavement, sibling support, parent care resources, and preparing to transition baby from NICU to home.

WHEATON FRANCISCAN HEALTHCARE-ST. FRANCIS

http://www.mywheaton.org/stfrancis or at 414-647-5000

Improve access to quality of care needed for preconception, prenatal and overall women's health care.

- OB providers and nurses will refer at-risk patients to community resources for Prenatal Care Coordination; such as the City of Milwaukee Health Dept. Home Visiting Program.
- Nurses in our Emergency Department refer pregnant patients who present to the ED without an OB provider to the Early Engagement program which connects her with both an OB provider and community resources.
- OB providers identify at-risk patients and administer weekly progesterone injections [or refer the patients to the Prenatal Assessment Center to decrease their risk for preterm delivery.

  Infants induced during the early term period (between 37 and 39 weeks) are at an increased risk of neonatal morbidity and mortality. We recently adopted a policy that states "elective inductions and cesarean sections will be performed at 39 weeks of gestation or greater, unless there is an obstetric or medical indication to do so".
- Educate and promote safe sleep programs

  Safe Sleep education is provided to all patients who deliver infants at WFH-St. Francis. They are also all screened to determine whether or not they have a safe sleep environment for their infant early in their stay and again at discharge. Portable cribs are provided to all of the families who don't have one for their infant, after they view an informative Safe Sleep video. The Safe Sleep environment is reinforced and role-modeled by the staff.

  We have recently begun a partnership with the Emergency Department to include a Safe Sleep assessment on all infants that present to the ED for any reason, and a referral process to determine Safe Sleep follow up.

  The WFH-St. Francis OB leadership team has been involved in the City of Milwaukee FIMR process.

  A referral for a Social Service consult will be ordered for co-sleeping, limited resources, or any additional safe sleep environment concerns (including but not limited to impairment or compliance issues).
- Educate women on the risks of drinking and smoking during pregnancy and beyond

  Pregnant women seen in the PNAC are screened during their first visit for alcohol, cigarette, and other drug use in pregnancy. All patients admitted to the hospital are screened for alcohol, tobacco, and illegal drug use. Nurses will refer women who use tobacco, alcohol or illegal drugs to a social worker, who will provide the patient with community resources.

Appendix A: Practice Guidelines and Standards of Care

National Institutes of Medicine

Children's Health	http://www.iom.edu/Reports/2009/FocusChildrensHealth.aspx
Women's Health	http://www.iom.edu/Reports/2011/Clinical-Preventive-Services-for-Women-Closing-the-Gaps.aspx
Preterm Birth	http://www.iom.edu/Reports/2006/Preterm-Birth-Causes-Consequences-and-Prevention.aspx
Obesity	http://www.iom.edu/Reports/2012/Alliances-for-Obesity-Prevention-Finding-Common-Ground.aspx
Oral Health	http://www.iom.edu/Reports/2011/Improving-Access-to-Oral-Health-Care-for-Vulnerable-and-Underserved-Populations.aspx
Public Health	http://www.iom.edu/Reports/2012/For-the-Publics-Health-Investing-in-a-Healthier-Future.aspx

NACCHO guidelines

Domestic violence	http://www.naccho.org/toolbox/tool.cfm?id=3029
Health equity and social justice	http://www.naccho.org/toolbox/tool.cfm?id=1611
Health equity	http://www.naccho.org/toolbox/tool.cfm?id=3163
Infant mortality	http://www.naccho.org/toolbox/tool.cfm?id=2579
Infections during pregnancy	http://www.naccho.org/toolbox/tool.cfm?id=2685
Late preterm infant	http://www.naccho.org/toolbox/tool.cfm?id=2487
Lifecourse	http://www.naccho.org/toolbox/tool.cfm?id=2078
Pregnancy spacing	http://www.naccho.org/toolbox/tool.cfm?id=2563
Safe sleep	http://www.naccho.org/toolbox/tool.cfm?id=2224
Smoking cessation	http://www.naccho.org/toolbox/tool.cfm?id=3215

American Academy of Pediatrics (AAP)

Child health guidelines	http://brightfutures.aap.org/
Safe Sleep	http://www.aap.org/en-us/about-the-aap/aap-press-room/pages/AAP-Expands-Guidelines-for-Infant-Sleep-Safety-and-SIDS-Risk-Reduction.aspx?nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token

American Congress of Obstetricians and Gynecologists (ACOG)

Hypertension and pregnancy
http://www.ohsu.edu/som/obgyn/programs/ACOG%20Practice%20Bulletin%20125%20Feb%202012.pdf

Diabetes and pregnancy
http://www.acog.org/Resources%20And%20Publications/Committee%20Opinions/Committee%20on%20Obstetric%20Practice/Screening%20and%20Diagnosis%20of%20Gestational%20Diabetes%20Mellitus.aspx

Stillbirth management
http://www.acog.org/About_ACOG/News_Room/News_Releases/2009/ACOG_Issues_New_Guidelines_on_Managing_Stillbirths

Depression
http://www.acog.org/About_ACOG/ACOG_Sections/Ontario_Section/Lets_Talk_about_Perinatal_Depression

Adolescent care
http://www.acog.org/About_ACOG/ACOG_Departments/Adolescent_Health_Care

Other Practice Guidelines and Standards of Care

Centering Pregnancy
http://www.centeringhealthcare.org/pages/centering-model/pregnancy-overview.php

CDC Pregnancy and Reproductive health guidelines
http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/index.htm

Literature, research and guidelines on stillbirth
http://www.stillbirthalliance.org/modules.php?name=Content&pa=showpage&pid=50&link_id=54#Investigation/Audit/Classification

Appendix A: Practice Guidelines and Standards of Care

General Resources

Northern Manhatten Perinatal Collaborative
http://sisterlink.com/

Association of Maternal and Child Health Programs
http://www.amchp.org/programsandtopics/womens-health/Pages/default.aspx

Hypertension and pregnancy
http://www.mayoclinic.com/health/pregnancy/PR00125

Diabetes and pregnancy
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3046748/

Interconceptional health
http://publichealth.lacounty.gov/mch/ReproductiveHealth/PreconceptionHealth/PCH_ConferencePresentation.htm
http://www.hscmd.org/documents/ICC_Manual.pdf

What Works? Policies and Programs to Improve Wisconsin's Health
http://whatworksforhealth.wisc.edu/
http://uwphi.pophealth.wisc.edu/programs/match/healthiest-state/what-works-policies-and-programs-to-improve-wi-health.pdf

Wisconsin Association for Perinatal Care (WAPC)

http://perinatalweb.org/index.php?option=com_content

Algorithm for Management of Unipolar Depression in Pregnant and Postpartum Women

Antidepressant Medication Chart

Baby Steps

Becoming a Parent™ Booklet

Caring for the Late Preterm Infant

Cesarean Reduction Toolkit

Childbearing Loss and Grief General References

Developing Community Support for Bereaved Parents

Early Pregnancy Information Tips for a Healthy Pregnancy

Folic Acid: A Position Statement for Providers

Healthy Weight Gain in Pregnancy - What's Right for You

Laboratory Testing During Pregnancy: Fourth Edition

Life Course Self-Assessment Tool

Newborn Withdrawal Project Educational Toolkit

More than Just the Blues Brochure

Planning for a Healthy Future: Algorithm for Providers Caring for Women of Childbearing Age

Preconception Health for Men

Interconception Health for Women

Women with Obesity

Women with Depression

Women with Diabetes

Pre- and Interconception Care and Reproductive Life Planning

Prescription for a Healthy Future

Screening Tools for Postpartum Depression

Voices of Experience: A collection of culturally-specific first-person narratives about perinatal depression

Weight-What to Say?

continued…

Women 2 Women 4 Healthy Babies https://www.facebook.com/W2W4HealthyBabies

- Breastfeeding
- Encouraging Full-term Pregnancies
- Our Part in Reducing Infant Mortality
- Prenatal Care Explained
- Influence of Parents
- Practicing Safe Sleep
- Healing between Births
- Premature Labor

State of Wisconsin

Pregnant women who do not have insurance should call the MCH hotline at 1-800-722-2295 or go to http://www.mch-hotlines.org/?id=4569&sid=33 for information on where and how to sign up for insurance.

City of Milwaukee Health Department

- STD posters
  http://city.milwaukee.gov/ImageLibrary/Groups/healthAuthors/MCH/PDFs/InfantMortality/2009_std_posters.pdf
- Safe Sleep posters
  http://city.milwaukee.gov/Safe-Sleep-for-baby
- Zip code and aldermanic district data
  http://city.milwaukee.gov/Health/HealthData-and-Publications
- Specific healthy birth outcome recommendations
  http://city.milwaukee.gov/Infant-Mortality

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[6] http://www.marchofdimes.com/mission/what-we-know-about-prematurity.aspx

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[8] http://gapps.org/index.php/about/mission_vision/

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[19] http://pregnancy.about.com/od/conditionscomplications/a/pgdepression.htm

[20] http://www.ncadv.org/files/DomesticViolenceFactSheet(National).pdf

[21] http://www.acog.org/~/media/For%20Patients/faq098.pdf?dmc=1&ts=20130619T1701327585

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Appendix D: Definitions

Accidental Suffocation: refers to the sudden unexpected death of an infant due to overlay, positional asphyxiation or mechanical asphyxiation

BMI: Body mass index (BMI) is a measure of body fat based on height and weight of adult women and adult men

Cause: A relationship between two events where the second event is understood as a consequence of the first event.

Fetal Death: fetal death or stillbirth is "a fetus which does not breathe, or show other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of the voluntary muscles." By Wisconsin statute, a stillbirth of at least 20 weeks gestation or 350 grams must be reported.

Fetal mortality rate: the ratio of fetal deaths divided by the sum of the births (the live births + the fetal deaths) in that year.

Gestational Age: weeks of pregnancy and the number of weeks that elapses since the first day of a pregnant woman's last menstrual period

Incompetent Cervix: a weakened cervix which could lead to preterm birth, infant death or stillbirth

Infant: a child born alive and less than one year of age

Infant Death: a child death occurring before a child's first birthday if the child was born alive, without regard to gestational age or weight

Infection category of death: a category of death where the cause of death is found to be bacterial or viral in nature, such as meningitis or pneumonia

Interconceptional Care: refers to the time between pregnancies, after the delivery of a baby and before the mother becomes pregnant again

Low Birth Weight (LBW): infants who weigh less than 2500 grams (5.5 pounds) at birth

Mechanical Asphyxia: a type of accidental infant death where the position of the infant's body was a cause of the death, *e.g.,* becoming wedged between the back of a couch and a wall

Perinatal Complications: a category of death where the infant is born full term and cause of death is a complication of labor and delivery

Positional Asphyxia: a type of accidental infant death where the position of the person sharing a bed with an infant was a cause of the death

Preterm Births: infants born before 37 weeks of gestation, also called prematurity

Prone Sleep Position: sleep position in which an infant is put to sleep on his/her stomach

Rates: use of a base such as 1,000 or 10,000 or 100,000 to standardize comparisons

Infant Mortality Rate (IMR): The number of infant deaths per 1,000 live births

Formula:

$$\text{Infant Mortality Rate} = \frac{\text{\# of infant deaths} \times 1000}{\text{\# of live births}}$$

Risk Factor: Risk is the probability that an event will occur. A risk factor exists where there is statistical evidence that an outcome is related to an exposure.

Rolling Average: a method used to smooth data by averaging several years of data

Stillbirth: a baby who died prior to delivery. Wisconsin State Statute defines a stillbirth as 20 weeks gestation or more and/or 350 grams or more.

Sudden Infant Death Syndrome (SIDS): the sudden death of an infant where no cause of death can be found after an autopsy and death scene investigation

Appendix D: Definitions

Sudden Unexpected Death in Infancy (SUDI): the sudden death of an infant where unsafe sleep risk factors are present

Supine Sleep Position: sleep position in which an infant put to sleep on his/her back

Very Low Birth Weight (VLBW): infants who weigh less than 1500 grams (3.3 pounds) at birth

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2009–2011 CASE REVIEW TEAM MEMBERS

Marilyn Bolton, RD, CD	State of Wisconsin, WIC Program Administrator
Michelle Brock, MS	Milwaukee Health Services, Centering Pregnancy
Kelly Bruhn, CNM	Aurora Healthcare, Certified Nurse Midwife
Ann Conway, RN, MPH	Wisconsin Association for Perinatal Care, Executive Director
Susan DeGraaf, RN, BSN	Children's Community Health Plan, PNCC Case Manager
Jill Denson, MSW	Milwaukee Health Services, Director of Social Services
Jennifer Doering, PhD	UWM School of Nursing, Assistant Professor
Kathy Ellertson, PhD	Bureau of Milwaukee Child Welfare, Medical Liaison
Katie Gillespie, RN, BSN	State of Wisconsin, Division of Health, Perinatal Nurse consultant
Felicia Hayden, MSW	Empowering Families of Milwaukee, Interim Director
Barbara Ingram, PhD	Milwaukee Public School, Retired psychologist
Vivian Jackson, MSW	Infant Death Center, Children's Health Alliance, Program Manager
Jason Jarzembowski, MD	Children's Hospital of Wisconsin, Pathologist
Maureen Kartheiser, MSEd	Wisconsin March of Dimes, Executive Director
Ashley Kas, MS, RNC-NIC	Columbia-St. Mary's Hospital, Obstetrics Manager
Katherine Kvale, PhD	State of Wisconsin, Division of Health, Wisconsin PRAMS Project Director and Epidemiologist
Teresa Lass, RN	Wheaton Franciscan Healthcare, Educator
Dana Lauer	Optum HealthCare, Healthy Birth Outcomes Project Manager
Candace Lovell, MD	Private practice Obstetrician/Gynecologist
Karen Lupa, CNM, NP	16th Street Community Center, Certified Nurse Midwife
Patricia Makarewicz. RN, BSN	Milwaukee Health Department, Public Health Nurse
Mary Mazul, CNM	Wheaton St. Joseph Hospital, Clinic Director and Certified Nurse Midwife
Patricia McManus, PhD	Black Health Coalition, Executive Director
Seema Menon, MD	Medical College of Wisconsin, Obstetrician/Gynecologist
Julie Merritt, BSN, RNC-OB	Froedtert Hospital, Labor and Delivery Nurse
Emmanuel Ngui, DrPh	Zilber School of Public Health, FIMR PI, Epidemiologist
Patrice Onheiber, MPA	State of Wisconsin, Infant Mortality Project Director
Karen Ordinans	Children's Health Alliance, Executive Director
Teresa Ortiz, MPH	CommunityConnect HealthPlan, Clinical Program Consultant
Jill ParadowskI, RN, MSN	City of Milwaukee Health Department, Retired Public Health Nurse Supervisor
Joshua Parish	Milwaukee Fire Department, Captain
Latasha Parish	Consumer and nursing student
Jenni Penn ,RN, MS, F-ABMD	Milwaukee County Medical Examiner, Investigator
Maureen Plevin	Consumer
Jill Radowicz, RN, BSN	Milwaukee Health Department, Nursing Supervisor
Nicole VanBendegon, RN	Wheaton Franciscan Healthcare, Clinical Nurse Specialist
Trina Salm Ward, PhD	Zilber School of Public Health, Center for Urban Population Health Program Manager
Jennifer Thede, MSW, LCSW	Optum Healthcare, Senior Field Care Advocate
Sandy Wolf, RN, MSN	Froedtert Hospital, Bereavement Coordinator and L&D Nurse
Jessica Zigman, MD	Medical College of Wisconsin, Resident Physician

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The United Way of Greater Milwaukee
Waukesha Memorial Hospital
Wheaton Franciscan Healthcare
Wisconsin Associate for Perinatal Care
Zilber School of Public Health

DATA

An understanding of the circumstances of the death of a baby requires more than just the medical cause of death listed on a death certificate or fetal death report. FIMR abstracts all birth records, medical care records, Milwaukee County Medical Examiner records, agency records and social service records pertaining to a death, when available. Information from standardized interviews with the parents of the baby is included, when possible. Data is only presented in aggregate fashion to protect the privacy of affected families. Data and graphs presented in this report are based on these abstracted records, unless otherwise indicated.

CONFIDENTIALITY

Records are treated with absolute confidentiality. Records are kept in locked file cabinets and are available only to FIMR staff. Case summaries presented to the Case Review Team are stripped of individual identifiers, including the names of providers and institutions involved in care. All Case Review Team members are also required to sign a statement of confidentiality for case review proceedings and to refrain from case discussion outside the time. Only aggregate data is released, and the data is censored if it might permit identification of an individual.

AUTHORS

Emmanuel Ngui, DrPH, MSc	FIMR Principal Investigator, Zilber School of Public Health
Karen Michalski, MA, MSW	FIMR Project Manager, City of Milwaukee Health Department
Elizabeth Mark, MPH	FIMR Project Assistant, City of Milwaukee Health Department
Lilliann Paine, MPH	FIMR Project Assistant, City of Milwaukee Health Department
Marisa Stanley, MPH	Epidemiologist/ GIS specialist, City of Milwaukee Health Department
Nancy Hills	Graphic Designer, City of Milwaukee Health Department

MATERNAL INTERVIEWERS

Olivia DeLeon	FIMR Community Interviewer
Terri Jordan	FIMR Community Interviewer
Pamela Ramsey	FIMR Community Interviewer

REVIEWERS

Katherine Kvale, PhD	State of Wisconsin, Division of Health, Wisconsin PRAMS Project Director and Epidemiologist
Eric Gass, PhD	Public Health and Research Policy Director, City of Milwaukee Health Department
Sarah Deroo	Communications Officer, City of Milwaukee Health Department
Geoffrey R. Swain, MD, MPH	Chief Medical Officer, City of Milwaukee Health Department, Professor of Family Medicine and Population Health Sciences, UW School of Medicine and Public Health

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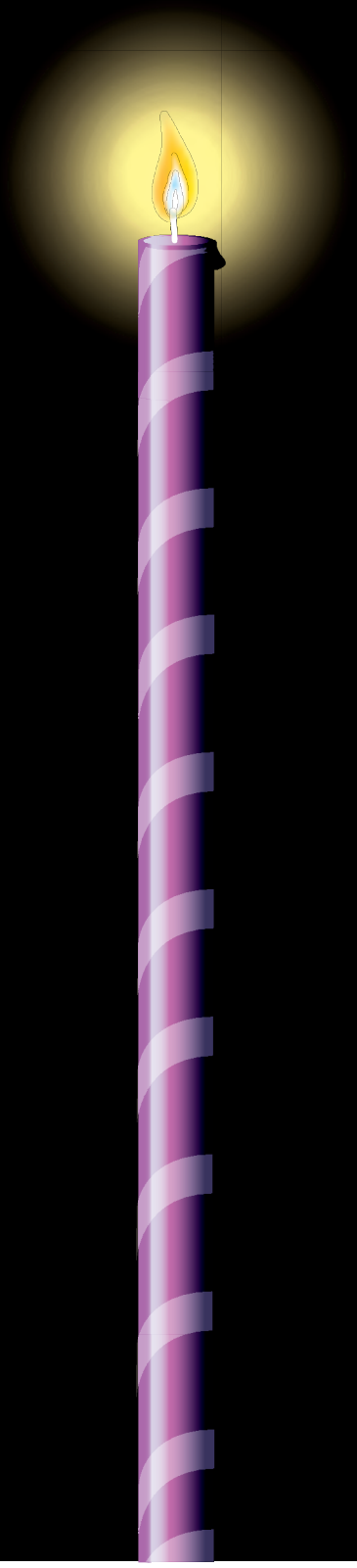
It is recognized that there remain many areas of concern which have not been addressed in this report. These include, but are not limited to:

- insurance inequalities,
- issues of medical error,
- the quality of system and individual provider care, and
- a multi-system response to issues of poverty and race.

We encourage all who read this report to develop or design a program based on one or more of the FIMR recommendations.

The FIMR project encourages a community wide response to this problem and would be pleased to work with groups willing to sponsor these initiatives.

HOPE.



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